Celebration Cakes

production and decoration

Morris W Howkins

Johnson & Wales Univ. Denver, CO
3 5159 00054 2632

ELSEVIER APPLIED SCIENCE PUBLISHERS

DATE DUE

OCT 1 1 2006

GAYLORD

PRINTED IN U.S.A.

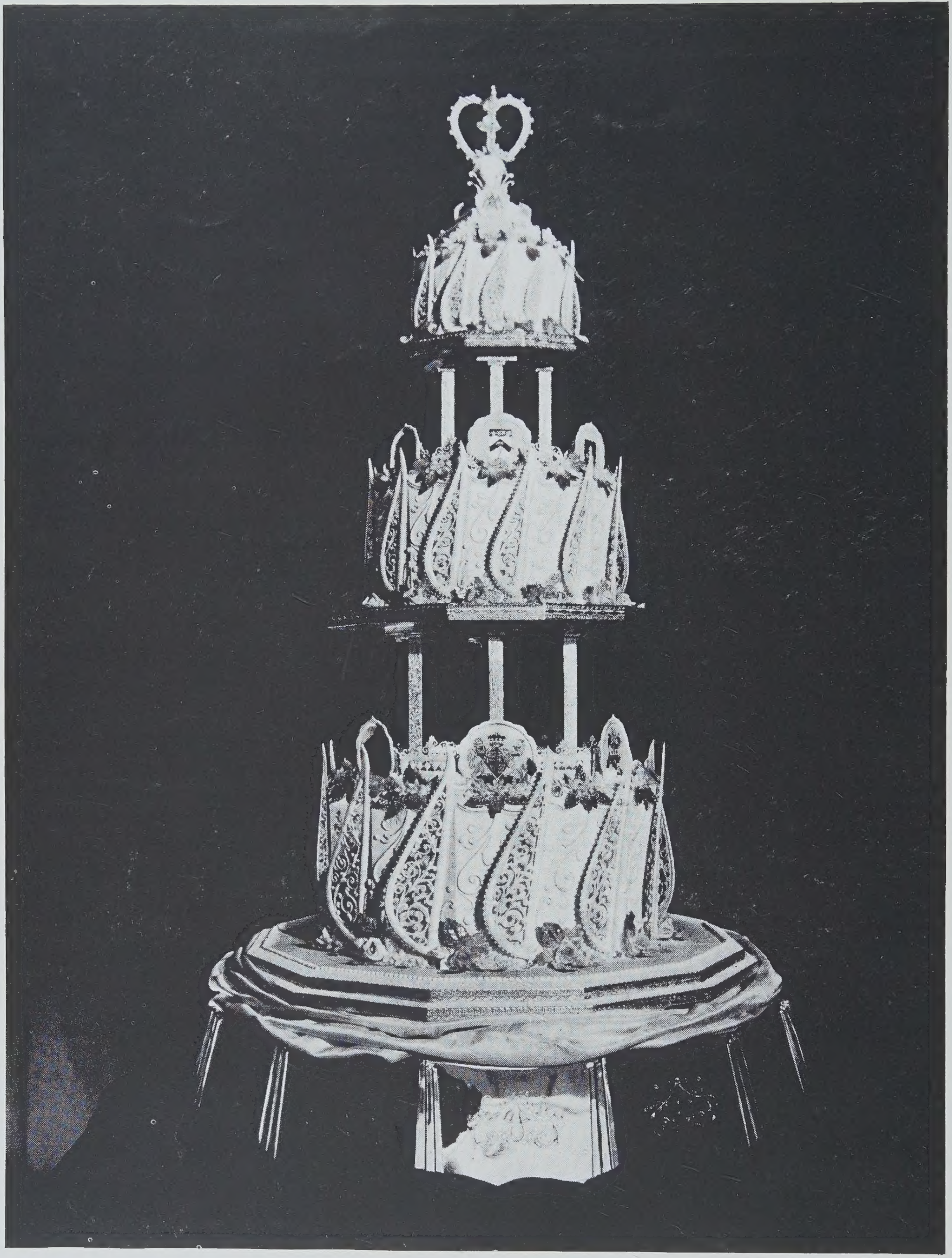
JOHNSON & WALES UNIV. DENVER, CO
3 5159 00000820 4

TX Howkins, Morris.
771 Celebration cakes.

Digitized by the Internet Archive
in 2026

https://archive.org/details/celebrationcakes0000mhow

Celebration Cakes



Frontispiece *H.R.H. Princess Margaret's Wedding Cake.*

641.8653
How
ce
c. 1

CELEBRATION CAKES

THEIR PRODUCTION AND DECORATION

by

MORRIS HOWKINS

ELSEVIER APPLIED SCIENCE PUBLISHERS
LONDON and NEW YORK

ELSEVIER APPLIED SCIENCE PUBLISHERS LTD
Ripple Road, Barking, Essex, England

Sole Distributor in the USA and Canada
ELSEVIER SCIENCE PUBLISHING CO., INC.
52 Vanderbilt Avenue, New York, NY 10017, USA

WITH 547 ILLUSTRATIONS

© 1968 MORRIS HOWKINS

British Library Cataloguing in Publication Data

Howkins, Morris
  Celebration cakes: their production and
  decoration.
  1. Cake decorating   2. Icings, Cake
  3. Baking
  I. Title
  641.8′653   TX771

ISBN 0 85334 316 0

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher, Elsevier Applied Science Publishers Ltd, Ripple Road, Barking, Essex, England

Printed and bound in Great Britain by
Biddles Ltd, Guildford and King's Lynn

Contents

page

INTRODUCTION xix

1. *Raw Materials* — Flours — butter — margarine — shortenings — sugars — eggs — selection of fruit — washing of fruit — cherries 1

2. *Standardization* — Cake sizes and shapes — preparation of hoops — wooden frames — three-tier cakes — cake weights — larger cakes — hexagonal cakes 5

3. *Wedding Cake Manufacture* — Recipes — method of mixing — baking the cake — baking temperatures and times — storing 8

4. *Almond Icing* — Ingredients — types of paste — almond content — weight per cake — applying the almond paste — coating the sides — exhibition-type cake 11

5. *Royal Icing* — Icing sugar — types of egg white — to improve whiteness — making royal icing — hand method — machine method 15

6. *Selection of Equipment* — Containers for icing — spatulas — knives — types of turntables — choice of piping tubes — making the paper bags 19

7. *Elementary Piping* — How to begin — piping lines — pressure — parallel lines — horizontal lines — making squares and curves — piping dots — scroll work — method of overpiping — simple borders 24

8. *Coating the Cake* — Sugar consistency — coating round cakes — number of applications — final coating — square cakes — exhibition dummies — method of coating 31

9. *Drawing and Designing* — Tools — division of circles — more advanced design — cake borders — plastic curves — compass and ink — more shapes — to make an ellipse — stencils 36

10. *Decorating a Wedding Cake* — Cutting a wedge — use of templates — tying a bow — coloured cakes — decorating a three-tier cake — border pipings — wedding decorations — pillars — top ornaments — decorative stands 43

11. *Advanced Piping* — How to pipe a circle — flange borders — base border — soft sugar work — wax-papers and brushes — preparation and method 52

12. *Modern Designing* — Three-tier design — removal from wax-paper — applying borders to cake — square wedding cakes — hexagonal cakes — fixing the panels 58

13. Celebration Cakes — Silver wedding cakes — golden wedding cakes — anniversary cakes — christening cakes — special wedding cakes — panels — net work — making a belfry — commercial wedding cakes — design and preparation — time and cost analysis 64

14. Heraldry — Terminology — constructing shields for a cake — colours — points of escutcheon — party lines — ordinaries — sub-ordinaries — roundels — charges 73

15. Gum Paste — Its application — making the paste — correct consistency — cut-outs — moulded work — making the moulds — moulding the paste 80

16. Birthday Cakes — Use of colour — standard weights — recipes — fruit cakes — layer cakes — plain cake mix — numerical birthday cakes — colour application — the use of fondant — ready-prepared coatings 85

17. Lettering — Different styles — Roman letters — ornamental lettering — block capitals — letter transfers — sugar-filled letters — colouring — script — writing in sugar — initials 89

18. Flower Piping — Piping equipment — rose nails and their use — petal formation — narcissi — flower centres — daisies — six-petalled flowers — sweet peas — pansies — carnations — roses — snowdrops — crocus — daffodils — tulips — primroses — palm and catkins — fuchsia — lilac — fruit blossoms — wild rose 94

19. Figure Craft: Birds — Blue tit — how to draw it — chaffinches — drawing baby birds — kingfisher — robins — piping birds commercially — colouring — swans — drawing a cockerel — geese — to pipe chickens — drawing with circles — doves — swallows — storks — pheasant — partridge — wild duck — budgerigars — parrot — owls 105

20. Figure Craft: Animals — Rabbits — figures in motion — squirrels — sketching — — stages of piping — hare — puppies and cats — lambs — hunting — galloping horse — elephant — circus animals — reindeer 124

21. Figure Piping — Exhibition motifs — piping direct on to cake — use of colour — crinoline lady — butterflies piped on wax-paper 139

22. Colour Craft — Elements of painting — colour charts — primary and secondary colours — neutral colours — edible colours — first attempts in colour — bird life — robin on branch — flower studies — painting a wild rose — sprays — foliage and trees — building up a scene — background and foreground — skies and sunsets — to paint water

— reflections and shadows — harmony — coloured borders 144

23. *Colour for Birthday Cakes* — Nursery rhymes: Jack and Jill — Little Miss Muffet — Little Jack Horner — Little Boy Blue — Humpty Dumpty — drawing in an oval — Aladdin — drawing with squares — fairy cottage — wishing well 160

24. *Borders for Birthday Cakes* — Colour schemes — star tubes and border construction — using petal tubes — marbling 165

25. *Novelty Cakes* — Children's cakes: engine — boats — novelty houses — covering with sugar paste — old woman's shoe — marzipan guitar — open book — 21st birthday cakes — centenary cake — sporting activities 168

26. *Party Cakes* — Numerical cakes — special frames — colouring — nameplates — decorations: horses and ballet — fruit as borders 175

27. *Exhibition Commercial Cakes* — Exhibition standards — points in judging — evenness and simplicity — schedules — cake boxes — colour dispensing 178

28. *Marzipan* — Preparation of marzipan — modelling tools — making roses — rose-buds — commercial style sweet peas — narcissi — fuchsia — carnations — marzipan fruit — marzipan figures — chick — swan — clown — elephant 182

29. *Chocolate* — Preparation — temperatures — piping on wax or greaseproof paper 190

30. *Christmas Cakes* — Marketing and display — recipes — decorations — standard sizes — selection of designs — pre-season preparation — cut-out motifs — inscriptions — rock sugar — marzipan borders — icicles — use of chocolate. 192

31. *Commercial Production* — Type of cake — standards and sizes — oven capacity — hoops and liners — cake weights and numbers — fully iced cakes — boards — almond icing — use of sheeter — use of moving web — stages in coating cake — icings and decorations — size of frill 200

32. *Packaging of Cakes* — Cellophane wrappings — wrapping methods — machines — frilling the cake — cake boxes 206

33. *Method Study in Mass Production* — Flow-line production — balance of work — training a team — work on moving web — break-down of work — work of service hand — packing 209

34. *Quality Control* Setting the standard — development department — recording specifications — packaging — visual samples 213

35. *Bakery Hygiene* Personnel — working conditions — care of raw materials — dried fruit machines 215

36. *Conclusion* 217

INDEX 219

Illustrations

Frontispiece H.R.H. Princess Margaret's Wedding Cake

Fig. 1.1 Defrosting of egg, first stage 2
Fig. 1.2 Egg de-tinned, agitated in stainless steel vessel 3
Fig. 1.3 Preparation of fruit fed into fruit washing machine 3
Fig. 1.4 Fruit picking, fruit extruded on to PVC web 4
Fig. 1.5 Fruit collected in plastic containers (washed) 4

Fig. 2.1 Various shaped baking tins 5
Fig. 2.2 Wooden frames (square), transfer of cake to frame, lining of square Wedding Cakes 6
Fig. 2.3 Liners for hoops and circles 6
Fig. 2.4 Balance of a cake within a triangle 7

Fig. 3.1 Mixing of the cake, spreading during mixing 8
Fig. 3.2 Transfer of cake to scales, one piece 8
Fig. 3.3 Preparing to level top with moistened hand 9
Fig. 3.4 Pressing into the corners and levelling 9
Fig. 3.5 Levelled with a cello scraper 9
Fig. 3.6 Preparation of an Exhibition Wedding Cake hoop 9
Fig. 3.7 Removal of baked cakes when cold 9
Fig. 3.8 Brushing tops with Rum syrup 9
Fig. 3.9 Wrapping the cakes in greasproof paper and marking with Delatac date label 10

Fig. 4.1 Brushing the apricot purée on top of the cake 12
Fig. 4.2 Rolling Almond Paste in a circular fashion 12
Fig. 4.3 Squaring Almond Paste with scotch scraper 12
Fig. 4.4 The paste is being brought into line with the cake 13
Fig. 4.5 Completed cake, note thickness of paste 13
Fig. 4.6 Rolling Almond Paste round side of the cake 13
Fig. 4.7 Securing paste to the side with rolling pin 13
Fig. 4.8 Exhibition Cake straight side. How the paper peels away 13
Fig. 4.9 Depth of paste to cake 13
Fig. 4.10 Exhibition cut Wedding Cake 14

Fig. 5.1 Whites and sugar 16
Fig. 5.2 Added sugar 17
Fig. 5.3 Lightening the sugar 17
Fig. 5.4 Small machine, sugar from spatula 17
Fig. 5.5 Polythene container with lid 17

Fig. 6.1 Various sizes in Polythene basins 19
Fig. 6.2 Spatula 19
Fig. 6.3 Palette knives of stainless steel 19
Fig. 6.4 Turntables 20
Fig. 6.5 Turntable separated, showing the insert at an angle 20
Fig. 6.6 Plain piping tubes, star tubes 21
Fig. 6.7 Flower-making tubes. Ribbon and leaf making 21
Fig. 6.8 Various sized piping bags showing each size complete 21
Fig. 6.9 Making bags. Move knife along the edge, prior to cutting 22

Fig. 6.10 Making bags. (Stage 1.) Held by left hand 22
Fig. 6.11 Making bags. (Stage 2.) Held at point 22
Fig. 6.12 (Stage 3.) Shows the rolling and take up of paper 22
Fig. 6.13 Folding in the last corner 23

Fig. 7.1 Point of tube on paper, position of hand 24
Fig. 7.2 Position of fingers when piping. (2) Life and suspend. (3) To give guidance 24
Fig. 7.3 Completed line, pressure released to finish 24
Fig. 7.4 Pressure exercised to give a smooth continuous line 25
Fig. 7.5 The pressure has been released, note finger and thumb position 25
Fig. 7.6 For guidance, pencilled lines 26
Figs. 7.7 & 7.8 Graduated lines, top and base of cake 26
Figs. 7.9 & 7.10 Shell or small star borders 26
Fig. 7.11 Interlocking squares 26
Fig. 7.12 Variation for base border 27
Fig. 7.13 Six piped curves 27
Fig. 7.14 How to progress a curve stage by stage, build-up with graduated lines 27
Fig. 7.15 Advanced curves overpiping and continuous line design 27
Fig. 7.16 & 7.17 Graduation in dots 28
Fig. 7.18 Faults in piping 28
Fig. 7.19 S Scroll progressive build up 28
Fig. 7.20 Overpiping graduation 28
Fig. 7.21 Graduation of a scroll 29
Fig. 7.22 C Scroll. S Scroll border 29
Fig. 7.23 Completed cake as described 29
Fig. 7.24 Student plaque 30
Fig. 7.25 Completed cake incorporating S scroll border 30

Fig. 8.1 Spreading-action on the sides 31
Fig. 8.2 Ease pressure to finish coating 32
Fig. 8.3 Angle of knife when coating the top 32
Fig. 8.4 Take off top edge to the centre 32
Fig. 8.5 Completion of top icing 33
Fig. 8.6 Final coating showing how sugar runs down the side 33
Fig. 8.7 Coating of square wedding cake 34
Fig. 8.8 Square ends by cutting surplus sugar away 34
Fig. 8.9 Coating the board, end of second coating 34
Fig. 8.10 Take away surplus sugar from board edge 34
Fig. 8.11 Coating Exhibition dummy 35

Fig. 9.1 Drawing equipment 36
Fig. 9.2 Division of the circle, using T square 36
Fig. 9.3 Variations to give the correct division 37
Fig. 9.4 Division of a circle by a set square 37
Fig. 9.5 Drawing of a run-out from a circle (7 in.). Points of division A, B, C, D, E 38
Fig. 9.6 Drawing aids 38
Fig. 9.7 Division of circle into six 39
Fig. 9.8 Using six points of circle 39
Fig. 9.9 Another pattern using the six points 39
Fig. 9.10 Drawing an oval 40
Fig. 9.11 Drawing an ellipse 40
Fig. 9.12 Construction of a pentagon 41
Fig. 9.13 Drawing a square with right angles 41
Fig. 9.14 Drawing a square with arc 41
Fig. 9.15 Use of French curves 42

Fig. 9.16 Stencils; squares, circles, elliptical 42
Fig. 9.17 Various curve designs 42

Fig. 10.1 Iced cake ready to cut wedge 43
Fig. 10.2 Various templates 43
Fig. 10.3 Use of set square for wedge score on top 43
Fig. 10.4 Scoring the side 43
Fig. 10.5 Cutting the wedge 44
Fig. 10.6 Ribbon in V-shaped greaseproof 44
Fig. 10.7 Stage 1. Ribbon right over left 45
Fig. 10.8 Stage 2. Fold underneath and pull tight 45
Fig. 10.9 Stage 3. Ribbon tie bow 45
Fig. 10.10 Stage 4. Bow tied, length of ribbon cut off 45
Fig. 10.11 Various build-ups of border on prepared base 46
Fig. 10.12 Scroll border. Built in two sections 46
Fig. 10.13 Top border underlined 47
Fig. 10.14 Underlined sides 47
Fig. 10.15 Base border 47
Fig. 10.16 Base border overpiping 48
Fig. 10.17 Wedding sprays 48
Fig. 10.18 Floral sprays 49
Fig. 10.19 Cupids, slippers etc., chrome or plastic 49
Fig. 10.20 Various sprays, assembled with silver bell 50
Fig. 10.21 Pillars 50
Fig. 10.22 Three-tier Hexagonal Cake with special motifs 51

Figs. 11.1 & 11.2 Piping a circle 52
Fig. 11.3 Line correction of circle with brush 53
Fig. 11.4 Flange border build-up of lines 53
Fig. 11.5 Filling in 54
Fig. 11.6 Soft coating and take off 55
Fig. 11.7 Base border 1 55
Fig. 11.8 Base border 2 55
Fig. 11.9 Special Three-tier Wedding Cake 56
Fig. 11.10 Piped outline. How to commence filling in 57
Fig. 11.11 Completely filled in. Brushwork 57
Fig. 11.12 Transfer run-out to metal sheet 57

Fig. 12.1 Run-out complete 58
Fig. 12.2 & 12.3 Three-tier drawing 58
Fig. 12.4 Removal of run-out, reverse side 59
Fig. 12.5 Peeled from the underside 59
Fig. 12.6 Three-tier Wedding Cake 60
Fig. 12.7 Two-tier Cake with scroll border 60
Fig. 12.8 Wedding Cake with scrolls and net work demonstrated to students 61
Fig. 12.9 Two-tier Square Kensington 62
Fig. 12.10 Three-tier Hexagonal 63
Fig. 12.11 Three-tier Wedding Cake 63
Fig. 12.12 Three-tier Wedding Cake 63

Fig. 13.1 Silver Wedding Cake 64
Fig. 13.2 Figure 25 piped 64
Fig. 13.3 25th Wedding Anniversary Cake 65
Fig. 13.4 50th Golden Wedding Cake with Cameron Highlanders badge 65
Fig. 13.5 Close-up of border of Fig. 13.6 65
Fig. 13.6 Commercial Christening Cake 66

Fig. 13.7 Christening Cake piped with stork 66
Fig. 13.8 Drawing for Christening Cake 66
Fig. 13.9 Special Cake design 67
Fig. 13.10 Special Cake design 67
Fig. 13.11 Panels 68
Fig. 13.12 Panels 68
Fig. 13.13 Panels 68
Fig. 13.14 Badges 68
Fig. 13.15 Heather motif 69
Fig. 13.16 Panel spray 69
Fig. 13.17 Panel motifs 69
Fig. 13.18 Piped belfry 69
Fig. 13.19 Belfry drawings 69
Fig. 13.20 Net work 70
Fig. 13.21 Exhibition Commercial Cake 70
Fig. 13.22 Designs for petals 71
Fig. 13.23 Floral cut piece 71
Fig. 13.24 How the petals are assembled 71
Fig. 13.25 Run-out corners drawing 71
Fig. 13.26 Sugar run-out corners 71
Fig. 13.27 Close up base tier 72
Fig. 13.28 Completed cake 72

Fig. 14.1 Iced Cake with Royal Insignia 73
Fig. 14.2 Drawing a shield 73
Fig. 14.3 Metals and Tinctures – colours 74
Fig. 14.4 Party lines 75
Fig. 14.5 Points on the shield 75
Fig. 14.6 Party line variations 76
Fig. 14.7 Ordinaries – A to H 77
Fig. 14.8 Sub-ordinaries 77
Fig. 14.9 Inescutcheon 77
Fig. 14.10 Sub-ordinaries: A. Annulet, FL. Fleur-de-lys, F. Fusil, B. Billet, R. Rose, Fret, Roundel 78
Fig. 14.11 Ordinaries used as fields 79
Fig. 14.12 Charges 79

Fig. 15.1 Materials for making gum paste 80
Fig. 15.2 Mixing the sugar and gum 81
Fig. 15.3 Rolling out gum paste 81
Fig. 15.4 Free underside 81
Fig. 15.5 Cut out with template 81
Fig. 15.6 Transfer of cut out 81
Fig. 15.7 Cut out plaques 81
Fig. 15.8 Shaped plaques 82
Fig. 15.9 Model in plasticine 82
Fig. 15.10 Wall or frame for moulding 83
Fig. 15.11 Examples of moulded gum paste 83
Fig. 15.12 Fibre-glass mould 83
Fig. 15.13 Carved wooden mould 83
Fig. 15.14 Church tower, sectional moulding 84
Fig. 15.15 Borders 84

Fig. 16.1 Display of Birthday Cakes 85
Fig. 16.2 Quality No. 1. Fruit Cake 86
Fig. 16.3 Quality No. 2. Fruit Cake 86

Fig. 16.4 Layer Cake Quality No. 1 87
Fig. 16.5 Plain Cake Quality No. 2 87

Fig. 17.1 $\frac{1}{2}$ in.—$\frac{1}{4}$ in. square graph. Roman 89
Fig. 17.2 One-inch square graph 89
Fig. 17.3 Roman capitals 89
Fig. 17.4 Roman small 89
Fig. 17.5 Italic capital 89
Fig. 17.6 Italic small letters 89
Fig. 17.7 Roman ornamental capitals 90
Fig. 17.8 Old English capitals 90
Fig. 17.9 Old English small 90
Fig. 17.10 Gothic style 90
Fig. 17.11 Decorative capital to draw 91
Fig. 17.12 Large block 91
Fig. 17.13 Small stencilled 91
Fig. 17.14 Dry transfer 92
Fig. 17.15 JUNE – piping ANTHONY (top pink, base green) overpipe 92
Fig. 17.16 Writing script 92
Fig. 17.17 Monogram 93

Fig. 18.1 Assorted sugar flowers, machine made 94
Fig. 18.2 Rose nails. How to use and pipe the petals 94
Fig. 18.3 Petal formation, drawings 94
Fig. 18.4 Pattern to use on a rose nail 95
Fig. 18.5 Assorted sizes of flower centres 95
Fig. 18.6 Six petal flower cupped edge 95
Fig. 18.7 Large flowers, petal formation 96
Fig. 18.8 Narcissi. Drawing and arrangement 96
Fig. 18.9 Carnations 97
Fig. 18.10 Carnation sugar flowers 97
Fig. 18.11 Sweet Peas 97
Fig. 18.12 Various Roses 99
Fig. 18.13 Rose centres 99
Fig. 18.14 Piping a Rose stage by stage 99
Fig. 18.15 Snowdrop 100
Fig. 18.16 Piped Crocus 100
Fig. 18.17 Crocus 100
Fig. 18.18 Piping Tulip stems 101
Fig. 18.19 Piping Tulip leaves 101
Fig. 18.20 Daffodils 101
Fig. 18.21 Primroses 102
Fig. 18.22 Palm 102
Fig. 18.23 Catkins 102
Fig. 18.24 Lilac 102
Fig. 18.25 Fuchsia 102
Fig. 18.26 Blossom 102

Fig. 19.1 Blue Tits perched on a branch 105
Fig. 19.2 Sketch of Blue Tit 105
Fig. 19.3 Chaffinch, stage by stage 105
Fig. 19.4 Diagram of fledgling 106
Fig. 19.5 Baby birds 106
Fig. 19.6 Kingfisher 106
Fig. 19.7 Diagram of Robin 106
Fig. 19.8 Make-up of Robin 107

Fig. 19.9 Robin on Holly branch 107
Fig. 19.10 Piping a Robin 107
Fig. 19.11 Rows of Robins 108
Fig. 19.12 Robin and Holly 108
Fig. 19.13 Drawing Swans 109
Fig. 19.14 to 17 Piping a Swan 109
Fig. 19.18 Stages in piping a Swan, right and left 110
Fig. 19.19 Swans in formation 110
Fig. 19.20 Finished cake top 111
Fig. 19.21 Cockerel 111
Fig. 19.22 Three make-up drawings 111
Fig. 19.23 Geese 111
Fig. 19.24 Progress of piped chick. A Body, B Head, C Wing, D Beak, E, F, G Legs 112
Fig. 19.25 Drawing Chick by circles 113
Fig. 19.26 One position 114
Fig. 19.27 Older Chick 114
Fig. 19.28 Piping in rows, stages 114
Fig. 19.29 to 34 Piping doves 115
Fig. 19.35 Flying attitudes 116
Fig. 19.36 Stages of piping a Dove on to a cake 117
Fig. 19.37 to 40 Doves prepared for decoration 118
Fig. 19.41 Doves completed for decoration 118
Fig. 19.42 A Flight of Swallows 119
Fig. 19.43 Two birds with nest 119
Fig. 19.44 Bird in flight 119
Fig. 19.45 Drawing a Stork 119
Fig. 19.46 to 52 Piping a Stork 120, 121
Fig. 19.53 Piping direct on panel 121
Fig. 19.54 Reeds and Bulrushes 121
Fig. 19.55 Stork plaque 121
Fig. 19.56 Pheasant feeding 122
Fig. 19.57 Pheasant, head aloft 122
Fig. 19.58 Large Partridges 122
Fig. 19.59 Wild Duck outward flight 123
Fig. 19.60 Wild Duck returning 123
Fig. 19.61 Budgie 123
Fig. 19.62 Parrot 123
Fig. 19.63 Stages in drawing an Owl 123

Fig. 20.1 Rabbit drawing 124
Fig. 20.2 Rabbit decorations 124
Fig. 20.3 & 20.4 Different positions 124
Fig. 20.5 to 12 Stages of piping a Rabbit 125, 126
Fig. 20.13 Rabbit groups 125
Fig. 20.14 Piped Rabbits 126
Fig. 20.15 Skipping Rabbit 126
Fig. 20.16 Running Rabbits 126
Fig. 20.17 Easter Rabbits 127
Fig. 20.18 Squirrel drawing 127
Fig. 20.19 Stages of sketching 127
Fig. 20.20 Piped figure 127
Fig. 20.21 Stages of piping 128
Fig. 20.22 Squirrel on branch 128
Fig. 20.23 Outline piping 128
Fig. 20.24 Drawing of Hare 129

Fig. 20.25 Piped figure 129
Fig. 20.26 Drawing of sitting Hare 129
Fig. 20.27 Outline in Sugar 129
Fig. 20.28 Running Hare 129
Fig. 20.29 Puppy running 130
Fig. 20.30 Puppy over wall 130
Fig. 20.31 Appealing pose 130
Fig. 20.32 Cat with squares 130
Fig. 20.33 Lamb. Two squares 130
Fig. 20.34 Sitting Lamb 130
Fig. 20.35 Spring Lambs 131
Fig. 20.36 Piping Lambs 131
Fig. 20.37 Designed plaque 131
Fig. 20.38 Piping Lambs, five stages 132
Fig. 20.39 Positional 132
Fig. 20.40 Cap and crop side panels 132
Fig. 20.41 Horse and Rider. Horse outline in sugar 132
Fig. 20.42 Hunting, Graph of horse 133
Fig. 20.43 Various action pictures 133
Fig. 20.44 Outline and colour of Hound 133
Fig. 20.45 Outline and stages of piping Hound 133
Fig. 20.46 Three Elephant variations 134
Fig. 20.47 Stages in drawing Elephant 134
Fig. 20.48 Elephant and baby 134
Fig. 20.49 Procession of Elephants 135
Fig. 20.50 Graph of Horse 135
Fig. 20.51 Reversed by tracing 135
Fig. 20.52 Positional change 135
Fig. 20.53 Seal graph 136
Fig. 20.54 Piped Seal 136
Fig. 20.55 Camel and rider, with graph 136
Fig. 20.56 Typical desert scene suitable for cake top 137
Fig. 20.57 Sleigh and graph 137
Fig. 20.58 Graph of Reindeer 138
Fig. 20.59 Outline piping 138
Fig. 20.60 Piped and coloured Reindeer 138
Fig. 20.61 Reindeers and Sleigh 138

Fig. 21.1 Butterfly plaque, showing butterfly perched on rim 139
Fig. 21.2 Another Butterfly plaque 139
Fig. 21.3 Drawings of figures 140
Fig. 21.4 (Left) Drawing on greaseproof 140
Fig. 21.5 (Right) Outline piping 140
Fig. 21.6 (Right) First stage of filling in 140
Fig. 21.7 (Left) Completed figure 140
Fig. 21.8 Direct piping of crinoline 141
Fig. 21.9 Various sugar Butterflies 141
Fig. 21.10 Butterfly drawings 142
Fig. 21.11 Commencing the body 142
Fig. 21.12 Completing the body 142
Fig. 21.13 Outline piping 143
Fig. 21.14 Filling in 143
Fig. 21.15 Coloured Butterfly 143
Fig. 21.16 Small Butterfly 143
Fig. 21.17 Larger Butterfly 143

Fig. 22.1 Colour charts 144
Fig. 22.2 Warm and cool colours (contrasts) 144
Fig. 22.3 Neutrals 145
Fig. 22.4 to 10 Stages in painting Robin on a branch 146, 147
Fig. 22.11 The completed design 147
Fig. 22.12 Rose, Flower only 148
Fig. 22.13 (Left) Outline, Wild Rose 148
Fig. 22.14 Rose sprays 148
Fig. 22.15 Flower arrangement for one half 149
Fig. 22.16 Plaque arrangement with Rose 149
Fig. 22.17 Flower studies: Crocus, Anemone, Tulip, Fuchsia 149
Fig. 22.18 Floral Cake top painted 149
Fig. 22.19 Butterflies painted 149
Fig. 22.20 Tree 150
Fig. 22.21 How to commence a scene with a cottage 151
Fig. 22.22 Skies 152
Fig. 22.23 Sky and sunset 153
Fig. 22.24 Water 154
Fig. 22.25 Ship on sea 154
Fig. 22.26 Riverscape with Swan 155
Fig. 22.27 Two posts in water 156
Fig. 22.28 Reflections. Line of sight 156
Fig. 22.29 How to calculate depth of reflection 156
Fig. 22.30 Angular reflections 157
Fig. 22.31 More acute angular 157
Fig. 22.32 House reflected in water 157
Fig. 22.33 Outling of picture 158
Fig. 22.34 Middle colour and distance 158
Fig. 22.35 Border sixes 158
Fig. 22.36 Border of crazy paving 159

Fig. 23.1 Jack and Jill 160
Fig. 23.2 Jack and Jill 160
Fig. 23.3 Little Miss Muffet 161
Fig. 23.4 Little Jack Horner 161
Fig. 23.5 Little Boy Blue 161
Fig. 23.6 Little Jack Horner 161
Fig. 23.7 How to draw Humpty Dumpty 162
Fig. 23.8 Aladdin's Lamp 162
Fig. 23.9 Graph and drawing of Aladdin 163
Fig. 23.10 Piped cottage 163
Fig. 23.11 Drawing a cottage 164
Fig. 23.12 Elf graph 164
Fig. 23.13 Toadstool house and elf 164
Fig. 23.14 Wishing Well 164

Fig. 24.1 Colour application as described 165
Fig. 24.2 Use of soft sugar to give relief 165
Fig. 24.3 Exercises with star and petal tubes 166
Fig. 24.4 Star and petal borders, complete cake 166
Fig. 24.5 Examples of marbling showing the various stages of markings 166
Fig. 24.6 Commercial Birthday Cake 167
Fig. 24.7 Marbling on run out border 167

Fig. 25.1 (Top) Engine in marzipan and chocolate. Base 12 in., Roll 8 in. Tender 2 in. 168
Fig. 25.2 Design showing model train centre, and border of railway lines 168

Fig. 25.3 Mini trains from miniature swiss roll and Genoese base chocolate coated 168
Fig. 25.4 Drawing of boat or sailing craft 169
Fig. 25.5 Sketch of house or cottage 169
Fig. 25.6 to 10 Progress of make-up in stages 170
Fig. 25.11 Sketch of shoe 171
Fig. 25.12 to 15 Make-up of novelty shoe in marzipan with chocolate filling 171
Fig. 25.16 Marzipan shoe with birthday candles 172
Fig. 25.17 Guitar (cake) 172
Fig. 25.18 Book, with university badge and 21st birthday greeting 173
Fig. 25.19 Key shape as 21st birthday cake 173
Fig. 25.20 Church Centenary Cake 174
Fig. 25.21 Cake incorporating football motifs 174

Fig. 26.1 Special frames: numbers, guitar 175
Fig. 26.2 Cutting frame 175
Fig. 26.3 Segmented cake drawing 176
Fig. 26.4 Biscuits, with chocolate Genoese names 176
Fig. 26.5 Horse jumping 177
Fig. 26.6 Show jumping 177
Fig. 26.7 Jellied strawberry border 177
Fig. 26.8 Orange circles 177

Fig. 27.1 Düsseldorf Cake 178
Fig. 27.2 Landscape Düsseldorf Cake 179
Fig. 27.3 Exhibition Commercial Cake 179
Fig. 27.4 Exhibition designing (Left) 179
Fig. 27.5 Piping direct on cake 180
Fig. 27.6 Boxes for exhibition 180
Fig. 27.7 Marzipan roses 181

Fig. 28.1 Modelling tools 182
Fig. 28.2 Making the petal. Rose petal, whites, paint brush and scissors. Muslin bag 183
Fig. 28.3 Formation of rose. Showing various sections 183
Fig. 28.4 Roses—various stages 183
Fig. 28.5 Formation: Narcissus, Rosebud, Sweet Pea 184
Fig. 28.6 Formation: Fuchsia, Rose 184
Fig. 28.7 Carnations 185
Fig. 28.8 Starch tray for fruits 186
Fig. 28.9 Marzipan Fruits 186
Fig. 28.10 Chick 187
Fig. 28.11 Stages in modelling: Elephant, Chick 187
Fig. 28.12 Swan: stages in modelling 187
Fig. 28.13 to 17 Clown 188
Fig. 28.18 to 20 Circus cake with Seals and Clowns 189

Fig. 29.1 Chocolate piping on marzipan top plaque;
(a) Spray formation;
(b) Petals piped singly;
(c) Complete flower with chocolate name plate 190

Fig. 30.1 Two Christmas commercial designs. Student work 192
Fig. 30.2 Exhibition commercial Christmas cake 192
Fig. 30.3 Christmas cakes, almond iced. Quality No. 1 & 2 193
Fig. 30.4 Student cake. Top division of cake with ribbon 194
Fig. 30.5 Plaques. Sledging in chocolate, painted girl with balloons 194

Fig. 30.6 to 10 Selection of Christmas cakes 195
Fig. 30.11 Drawing for six-sided run-out and star 195
Fig. 30.12 Christmas plaque, six-sided run-out tinted corners 196
Fig. 30.13 Examples of Christmas run-out and marzipan cut-outs 196
Fig. 30.14 How to assemble nondescript shapes 196
Fig. 30.15 Marzipan cut-out. Run-outs for inscriptions 197
Fig. 30.16 Christmas cake, showing the use of rock sugar 198
Fig. 30.17 Christmas plaques. Decorated ring in marzipan, chocolate and sugar 198
Fig. 30.18 Railings, ladders, spun chocolate and chocolate drops 199
Fig. 30.19 Chocolate nameplates on polished metal surface 199

Fig. 31.1 Christmas cake to specification 200
Fig. 31.2 Fully coated cake 2½ lb. 200
Fig. 31.3 3¾ lb. coated to specification 201
Fig. 31.4 5 lb. coated to specification 201
Fig. 31.5 Cutting paste and plaques for the cake from sheeter 202
Fig. 31.6 Securing the top with a piece of wood 202
Fig. 31.7 Removing Christmas cakes from dipping wires to silver board 203
Fig. 31.8 Passing cakes through the enrober, first coating 203
Fig. 31.9 Fondant coated cake prepared for icing 204
Fig. 31.10 Christmas cake 204
Fig. 31.11 Alternative styles 205
Fig. 31.12 Completed cake 205

Fig. 32.1 Cakes assembled for wrapping 206
Fig. 32.2 Feeding cakes into machine 207
Fig. 32.3 Cake wrapped in cellophane, delivery end 208

Fig. 33.1 Section of production line 210
Fig. 33.2 Showing frill secured round cake 211
Fig. 33.3 Cakes, packed and boxed 211

Fig. 34.1 Check weighing 213

Introduction

The baking industry has now become a very highly organized trade, and the development has been such that it may be compared with the progress of many of its associates. Mechanization has played its part in this transitional period, and the equipment now obtainable enables the standard of our efficiency to rise to a far higher level.

Nevertheless, our basic standards remain much the same; but by studying the improved production of raw materials and the decorative facilities that have been made available, we are able to approach the subject with greater vision, better manipulative ability, and always a wealth of knowledge at our disposal—constant enlightenment under ever-changing conditions. In the following chapters such factors have been applied, together with some thought for the developments of the future, not only to be of assistance to those already playing their part in the trade, but also to help the newcomer who, from the outset, has the opportunity to acquaint himself with modern methods, and who will provide the progressive continuity that will come in future years.

In the preparation of this book the basic work of the student has always been emphasized, for it is from that stage that the more advanced ideas must progress. A sound foundation of the elementary essentials has therefore been laid down, coupled with an easy-to-follow pictorial guide.

The commercial aspect must always be a prime consideration for it is upon the success of our daily routine work that we depend in order to strengthen and diversify our imaginative ability.

Definite fixed standards should be of the utmost importance today, so much so that they become a basic requirement in the formulation of any product. Similarly, the basic materials should be studied and as far as possible standardized—or at least a standard should be set—so that production, however large, will function according to the standards laid down and so yield a consistent result.

Quality of the product is also closely allied to standards, and while it is our every endeavour to maintain the highest quality, we sometimes have to meet a demand for something, shall we say, a little more commercial.

Craftsmanship will create advancement, careful study will blossom into an individual style, making our work easily recognizable, both in the making of the cake and, for the more artistically minded, on the decorative side also, where it is more easily discernible.

Art today is practised in many ways and applied art can be very advantageous in our own sphere, particularly in colouring and design.

Many will appreciate the possibilities in the production of high quality cakes, especially for the enthusiast who becomes exhibition minded. A good deal of hard work is necessary, but it can be very rewarding. Competition will develop a keen, active mind and the ambition to improve.

Our methods of production are often on a very large scale in these days and need some form of mechanical assistance. Although the project necessarily becomes somewhat stereotyped, there is a quality of craftsmanship that is essential in maintaining a constant repetitive product. Our previous experience will serve to help in large-scale production, for while we have been concerned with individual taste, we are now concerned with simplification of style, and all items of a singular nature, however small, culminate collectively in the desired standard of the finished product.

Speed and efficiency are also brought into line with production. Here the measurement of time and the ability to assess the skill of a performer are new fields wherein modern development is taking place.

We in our profession have a large part to play in promoting social enjoyment, and with this aim in view we can enlist our artistic qualities, our individuality, love of perfection, and keenness to establish a satisfactory customer relationship. This will in time create a tradition that will result in a sound and prosperous business of which we may well be proud.

1 Raw Materials

In the preliminary stages of cake making we need to study the raw materials used in the manufacture.

We have been taught that knowledge is power, so the more we learn of the materials used the better the end-product will be. We are creating a special cake for a special occasion and it is to our advantage to use the best possible ingredients. To a large extent the excellence of the cake is determined by the quality of the materials that can be obtained, but it is not always the most expensive that prove to be the best. Over the years, quality in materials has got very much better, and in the light of new and improved sciences perfected in the manufacture of cake, we are now in a position to approach this subject in a more intelligent manner.

Flours

In latter years, the basic principle in recipe construction has revolved around one of the main ingredients, and most common to us for a basic calculation is flour. Straight run, high ratio, high protein flours all have their special uses in the manufacture of cake and, since it is necessary to understand their uses and functions in the various aspects of cake making, we are able to select the right flour for a particular cake.

Our requirements at the moment are for a heavily fruited cake in which we need a flour not too soft but sufficiently strong to give a fine crumb and maintain a good fruit distribution. Straight run flour of 70% extraction would be ideal for this type of cake production, and in the majority of smaller bakeries this is the most common flour in use.

Butter

Butter is always recommended as a first-class choice in fats, which, again, reflects itself in quality.

Danish, Australian, and New Zealand are some of the best to be considered. Butter should be workable, not waxy, and our choice should be decided by flavour, for imparting the fullest flavour to the cake is its prime function. However, the creaming properties of butter are not so good as those of other fats, and do not provide such a fine textured cake. For this reason alone the inclusion of a percentage of margarine or fat will assist in emulsification, thereby giving more stability to provide a better cake structure.

Margarine

Margarines of varying qualities are now available, some of the better ones having a percentage of butter incorporated; their creaming properties are very much improved and, used in conjunction with a good shortening, they provide a good substitute for butter. A combination of these fats will achieve the formation of a good batter structure and result in a cake that has good cutting qualities.

Shortenings

Vegetable fats or shortenings are used in small proportions; 25% of the fat content should be sufficient, and will help in emulsifying the other fats during beating. A good quality vegetable fat with a good air intake is ideal, but if the proportion is too great there is a tendency towards excessive beating, producing a lighter structure which tends to crumble on cutting. It must be remembered that vegetable shortening is 100% fat, whereas butter and margarine are only 84% fat.

Sugars

Barbadoes, *Demerara*, and *hard crystal* are the best sugars for wedding, birthday, and christening cakes, for not only is the flavour of the cake enhanced but they act as good darkening agents. It is essential to have good colour and this may even be improved by the addition of colouring matter, but care must be taken so that the colour is not too dark, or the beauty of the cut surface will be lost. This is a common fault: excess colour tends to destroy the flavour of the sugar. There is a feeling in various spheres that the darker the cake, the richer the mix. One of the best examples of this can be seen in cut wedding cake classes at the main exhibitions, for most of the competitors have in mind a particular colour standard, a standard which has found favour with the judges and has developed through the years. It is surprising the amount of variations one can perceive, however, though all may be exceptionally good cakes.

Moist or brown sugars are also of value in this type of cake, although their flavour is not so predominant. Light syrup and dark treacle are also by-products of sugar and some prefer a percentage in the sugar content.

A certain amount of flavour is obtained from their use but they are mainly good moistening agents and assist the keeping quality of the cake.

Sugars, therefore, provide the sweetness and, combined with the fats, allow air to be incorporated, thus creating the cell structure and enabling the egg to be amalgamated without fear of the batter curdling.

Invert sugars, if used in small proportions, will assist in moisture retention and flavour, and are readily available through the sugar suppliers. A general replacement of sugar at the rate of 2 oz. per lb. should be the limit, but this is a matter of personal choice.

GLYCERINE

This will also act as a moistener, owing to its hydroscopic nature. The amount required is based on the fat content at the rate of 1 oz. per lb. for the richer type of cake; it is best added to the fruit, together with any spirit. Larger quantities are used in the cheaper cakes: up to 5 oz. to each 1 lb. of fat. Glycerine attracts and holds moisture and acts as a preservative similar to sugar.

Eggs

With *shell eggs* there is a considerable variation in size and, while the average weight of a hen's egg is 1¾–2 oz., it used to be general policy to accept eight eggs to the lb., but, with today's grading of eggs, it is always more accurate to specify the quantity of egg to be used in any recipe. The problem of cracking eggs and disposal of empty shells, as well as the possibility of a tainted egg going in, is constantly present.

Frozen egg, by law, now has to be pasteurized, and is equally successful as fresh egg. A considerable quantity of English-produced egg is now processed in this way. (Frozen egg is also imported from Australia and New Zealand.) Provided it is stored correctly in a holding refrigerator and only sufficient drawn out for our immediate needs, excellent results are obtainable.

The egg must be slowly defrosted by placing the tins slightly apart in a tank and allowing cold running water to pass over them. When thawed, the tins need to be opened as neatly as possible. Beware of rough edges. After emptying, the tin should be cleared with a scraper. The de-tinned egg for all purposes should then be placed in a vessel, preferably stainless steel, and agitated to procure a homogeneous mass. Egg should be used at a temperature of 68°–70°F.

Whole egg contains up to 75% moisture and is, therefore, an important moistening agent, a point to be remembered when balancing the recipe. One pound of egg will moisten 1 lb. of flour and will also aerate the same weight. Whole egg also contains approximately 12½% proteins and 12% fat and mineral salts, all enriching agents, thus improving the food value of the cake in which it is used. It will also act as a good emulsifying agent.

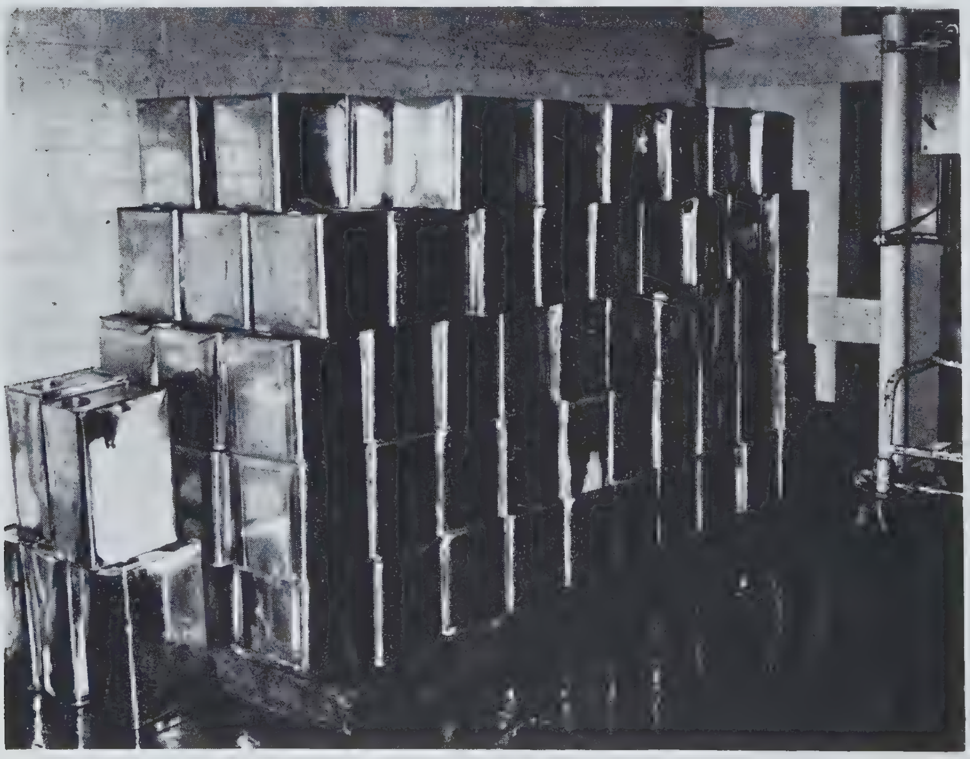


Fig. 1.1 *Defrosting of egg, first stage.*

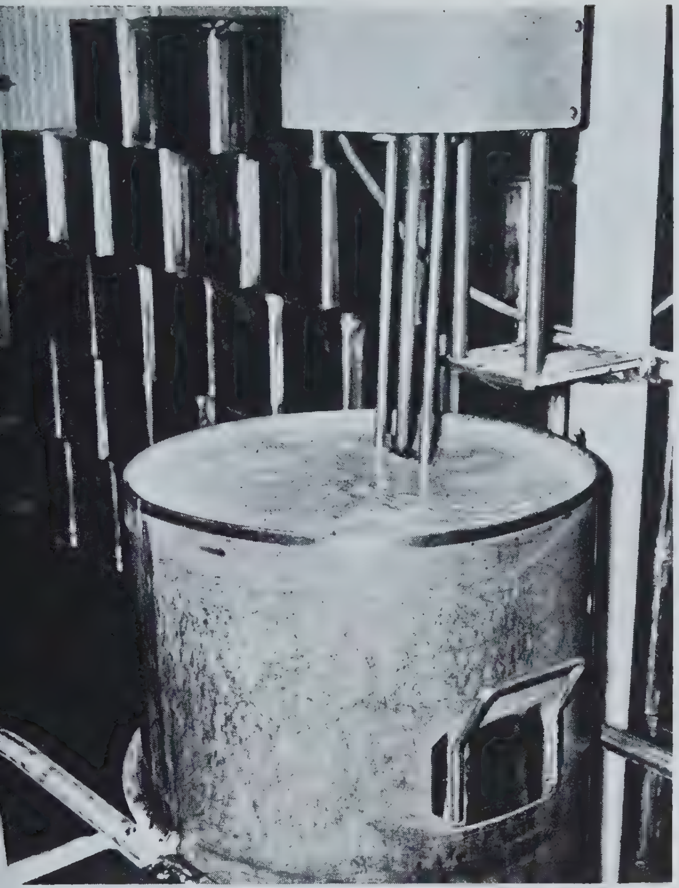


Fig. 1.2 *Egg de-tinned, agitated in stainless steel vessel.*

DRIED EGG

Dried egg is also available for use in cake making. It is reconstituted in the proportion of 1 lb. of egg powder to 3 lb. of water and should be prepared in this manner prior to use. Dried egg does not have the same power of emulsification as whole egg and tends to dry more quickly. Some adjustment is often necessary to the aeration, as loss in volume generally occurs.

AIR FREEZE DRIED EGG

A now improved product being used in certain cake-making units. Closely allied to dried egg, it is freeze dried and has to be reconstituted. Being exposed to high and low temperatures does slightly affect the albumen content and in some types of cakes it would need a little adjustment. The advantages of such a product are that it does not require defrosting and de-tinning; there is no disposal of tins; it can be stored apart from the refrigerator more compactly; it is easier to weigh, cleaner, and would suit automatic dispensation. Experiments should be made before a final decision is reached.

Selection of fruit

The selection and preparation of fruit is without doubt one of the most important functions in perfecting a good cake.

CURRANTS

Currants form the highest percentage of fruit used. They are, in the main, obtained from Greece, Australia, and Iran. Greek calamator, Pygros, Patras, and Vostizza currants are the chief graded brands on the market, Vostizza being the best. The lower grades tend to contain foreign matter and need to be carefully selected. A good, bold, fleshy currant is required for this work and small, dried, gritty fruit should be avoided at all times.

SULTANAS

These are mainly grown in Australia, Turkey, and America. Australian sultanas are very widely used and are graded into 1–6 crown, in that order. Grades 3, 4, and 5 crown are all good, bold, fleshy fruit of a nice light amber colour and good flavour and as the grade lowers variation in colour and size is more noticeable. Turkish Smyrna are also graded and should be carefully selected. Very often, however, it is a question of what the market offers.

LEMON AND ORANGE PEELS

These all have their uses, and while for general production lemon and orange can be bought ready prepared, either separately or mixed, it is usual to obtain citron caps for exhibition cakes and cut them evenly into either small cubes or shreds. Added to the cake in this manner, citron peel will give a clean bright appearance to the cut surface.

Fig. 1.3 *Preparation of fruit fed into fruit washing machine.*

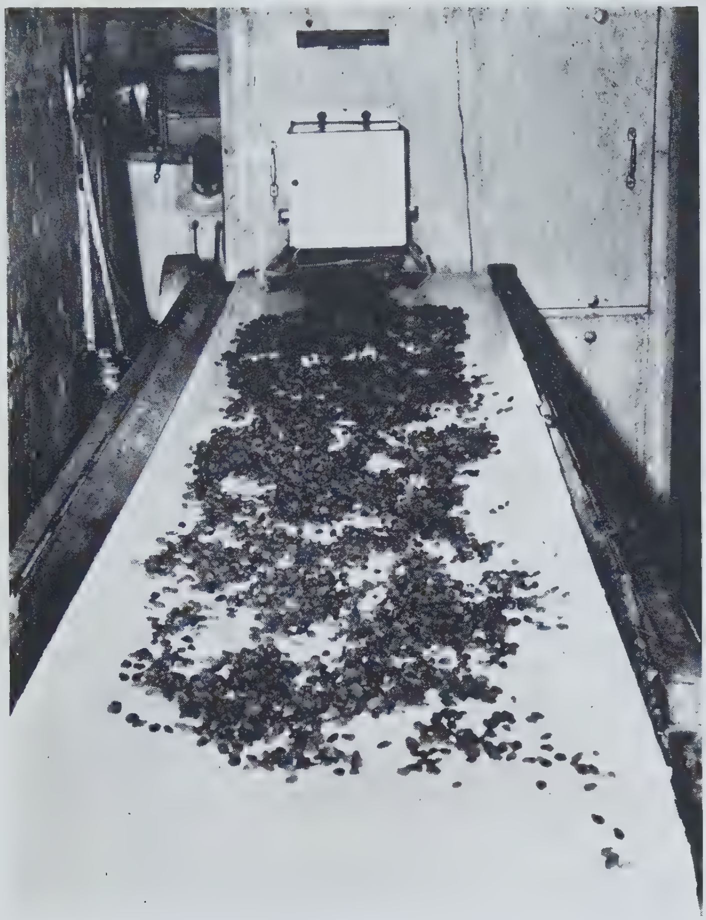


Fig. 1.4 *Fruit picking, fruit extruded on to PVC web.*

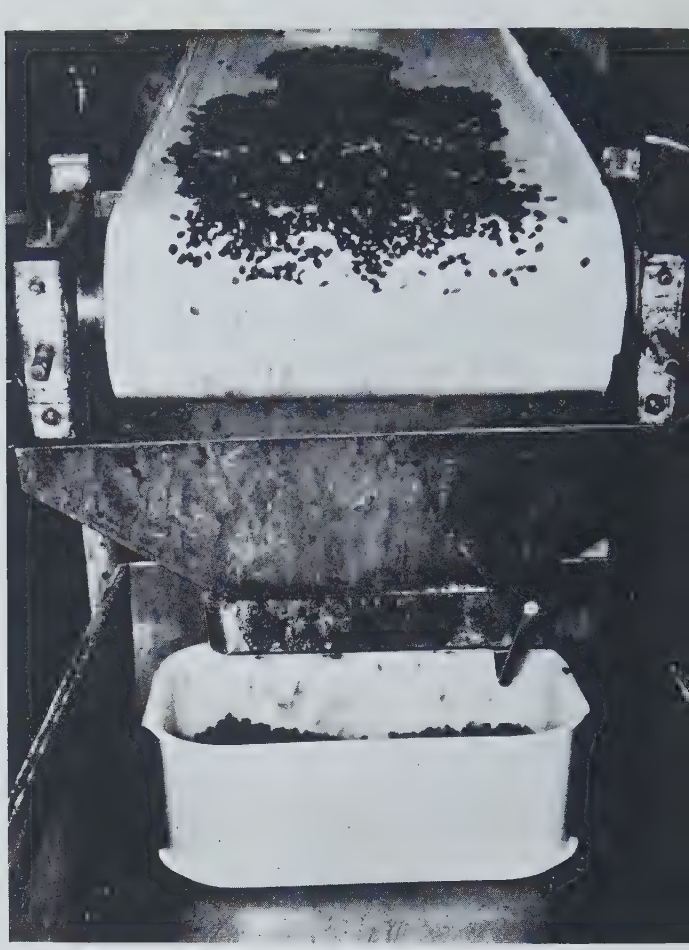


Fig. 1.5 *Fruit collected in plastic containers (washed).*

Washing of fruit

Whatever the quality of the fruit, this is the most important phase in its preparation. All fruit should be thoroughly washed and cleaned and all stalks and extraneous matter eliminated; the fruit should be placed on suitable wires or in containers so that any surplus moisture drains away.

The amount of fruit that is now used in cake production often necessitates its preparation by some mechanical means. There are several types of machines marketed for fruit cleaning. In the main the fruit is momentarily suspended in water, allowing stones to fall; after passing through a rotating cylinder the fruit is then extruded on to a plastic moving web under a magnetic field and vibrator which spreads the fruit out. Any stalks are then picked out and the fruit is thoroughly cleaned, prior to collecting in suitable containers.

Fruit at this stage should be carefully weighed into standard amounts ready for use in the cake-making department. Only fruit required for the next day's production should be prepared. Fruit stored in too wet a condition is always liable to commence fermentation. For the smaller units, where a washing machine cannot be employed, it is now possible to obtain fruit from certain suppliers already washed and cleaned.

CHERRIES

The inclusion of cherries is purely a matter of choice, for in some areas fruit cake will not be accepted without their inclusion, while some makers prefer not to use them. We have very good samples on the market, mostly imported from France and Italy and graded into various sizes, and it is now possible to select just what is required. The smaller cherries, while intended for decorative purposes, will give a larger number per lb. and a larger coverage costwise: a lesser quantity will give a satisfactory distribution.

In the past it was necessary to wash or rinse cherries so that the surplus syrup was taken away, and then to dust them with flour or rice flour. But now we have free flow cherries already prepared which are weighed and added to the rest of the fruit. Where quantities are being used, this is a great saving of time and nothing pleases the eye better than to see cherries distributed evenly through the cake and all of the same size.

2 Standardization

In preparing to provide a series of attractively decorated cakes we must formulate some idea as to the size required for our present-day catering.

Cake sizes and shapes

It is a common procedure to sell a given weight at a set price, or a certain price per lb., which is then converted into a corresponding weight. Therefore, we require a simple method of assessing a basic standard. For example, if the price of the cake is fixed at 10s. 6d. per lb., then 10 lb. will equal 5 gns., and 20 lb. equal 10 gns. By this means we can make up a standard selection of cakes at either a set price or weight. Again, where our standard cakes are to be presented by photograph or brochure, further guidance is offered if the amount per person is stated. For instance, let us assume that 1 lb. of cake iced will be sufficient for five persons. Some perhaps may think this high but it is better to have enough than be short: on our basis, then, a 20 lb. cake will cater for 100 persons. In this way we can arrive at a standard which will be easier and more convenient to customer, shopkeeper, and producer.

Some thought must also be focused on depth, for there are many schools of thought on what a good wedding cake should be. Some prefer a shallow cake, some a deeper, and this quite often has to conform to a set decoration. But if we aim to keep the finished cake at 2¾–3 ins. in depth this size looks attractive, is easily cut, and the proportion of cake to almond icing gives a good comparison. The depth of course also relates to the size of hoop required.

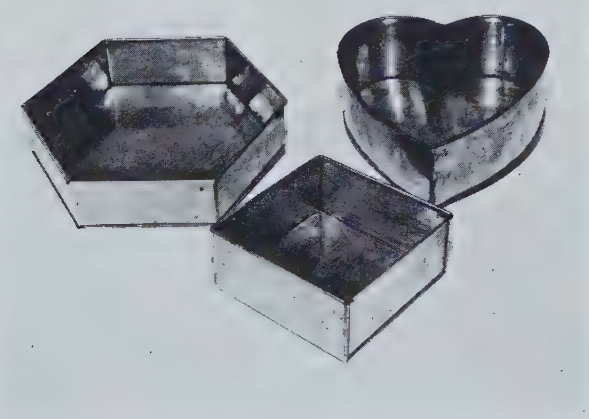


Fig. 2.1 *Various shaped baking tins.*

Present-day needs must also claim our attention. In the past a wedding cake was always accepted as round in shape, but today various shapes are produced. Probably the most popular is a square cake. The demand for this shape is increasing, due perhaps to the fact that it is easier to cut into sections, apart from general appeal. Horseshoe shapes and heart shapes have a fair demand and possibly one or other should be included in a good price list. The making of these cakes takes a little longer both in the preparation of the shapes and in the finishing off. Some may feel this is not worth while or that an extra charge should be made for the extra work involved, but this can only be left to the individual to decide in the light of his costings.

Preparation of hoops

Hoops or tins can easily be obtained from the sundriesmen who are now able to supply whatever sizes are required. Horseshoe and heart shapes are also available in standard sizes, which will more or less determine the size of the cake. Generally the depth of all hoops should not be more than 3 ins. for commercial purposes.

The tin should first be lined with a brown or kraft liner. A greaseproof liner is then placed on the inside at approximately the same height, and a further greaseproof liner the exact depth of the cake. The hoop, so lined, should be placed on a baking sheet, previously lined with brown paper or even thin cardboard on which a sheet of greaseproof paper has been laid. This thickness, of course, depends on the way the oven bakes and the protection needed. As there is great variability in ovens this must to some extent be left to individual decision.

With the small hoops of 8 ins. and less, greaseproof circles are obtained to place in the base of the tins. When baked, the cake can be taken away and have a liner around the sides and base which will give protection and help in the keeping and maturing of the cake when stored.

Wooden frames

Square cakes can also be made in tins of standard size or, if desired, wooden frames can be made from ½ in. thick wood. Wood, being a poor conductor of heat, gives better protection to the cake during baking, and

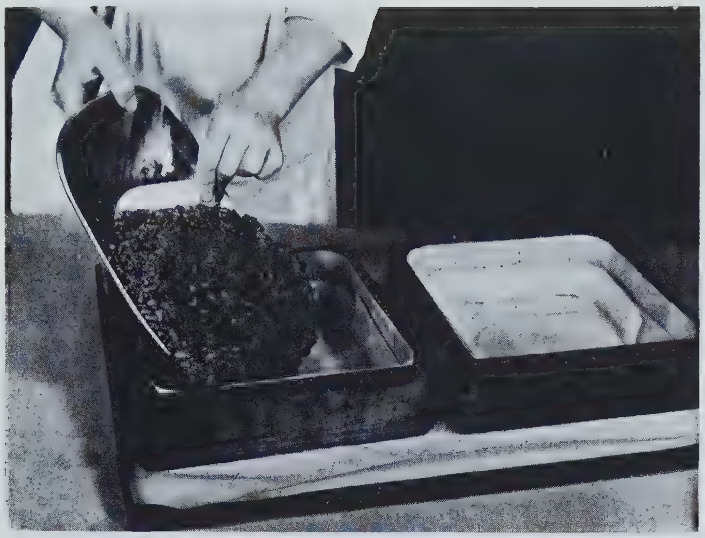


Fig. 2.2 *Wooden frames (square), Transfer of cake to frame, lining of square Wedding Cakes.*

the frames can be used over and over again. As with the round hoops, they are lined first with brown paper followed by the two greaseproof liners, but place a square piece of greaseproof in the base for protection. If quantities are to be produced throughout the year and as the sizes of cakes or shapes are standardized, we can arrive at a given length and depth of liner which can be bought already cut to size, thus eliminating time and labour in preparation. No doubt such liners would have their uses in other spheres of cake-making. Silicone paper is also widely used and enables the cake to leave the paper quite freely, but, in using this, it is better to leave the paper on the cake until such time as it is processed.

Three-tier cakes

The purchase of a wedding cake plays a most important part in the preliminary arrangements for a wedding. Most brides favour a three-tier cake, again emphasizing the importance of the function, but if the wedding is not so large then a two-tier cake may be preferred. There is, however, some demand for the single tier, so that this cannot be discounted.

To start with, we will look at a three-tier cake and a reasonable size for 100 persons, which, as stated previously, means a 20 lb. finished cake.

CAKE WEIGHTS

It is usual to estimate a cake in the following manner: at least half the weight will be cake and the other half divided between the almond paste and icing and board, etc. The weight of cake must also be the approximate weight after baking, and allowance for baking loss should be at the rate of at least 1 oz. of cake per lb.

The following tables give some idea of the hoop size, cake weight, and the size of board required to fit the various cakes.

Round Cake

Hoop size ins.	Wt of cake mix lb. oz.	Size of board ins.
11	6 6	14
10	5 5	13
9	4 4	12
8	3 3	10
6	2 2	8
5	1 9	7

Square Cake

Frame ins.	Wt of cake mix lb. oz.	Size of board ins.
10	6 6	14
9	4 4	12
8	3 3	10
6	2 2	8

ASSEMBLING A THREE-TIER

To assemble a well-proportioned, three-tier, round wedding cake, sufficient space—2–3 ins.—should be allowed between the cake and the edge of the base board to allow for a reasonable decoration. This has the effect of setting the cake up, and preparing a good foundation to build or receive further tiers. The base

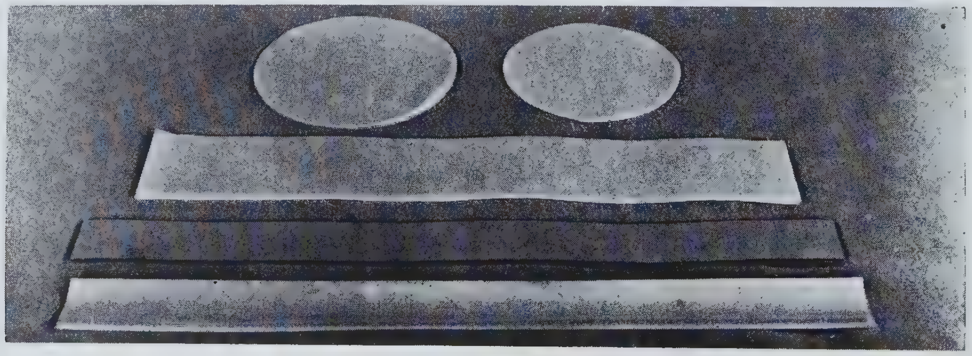


Fig. 2.3 *Liners for hoops and circles.*

board for the second tier should either be the same as the top dimension of the base tier or slightly smaller, for this will give emphasis to the top border and decoration—the main focal point when people are seated at the tables. Similarly the top tier should either be the same as the top dimension of the second tier, or just inside.

To achieve a perfect balance, the three tiers should be contained within a triangle formed by the dimension of the base board. If a line is drawn at right angles from the centre point to a height of 24 ins., the outer points joined will form the triangle, the dimensions of which will contain three cakes with two sets of pillars, allowing for a 6 in. ornament or vase. By doing this, the correct balance of the cake is achieved. This same principle applies to all tiered cakes, be it three, four, or more tiers. It is also of considerable help when working out large special cakes.

A study of the scaling weights shows that the three-tier round is composed of 6 lb. 6 oz. base cake, 3 lb. 3 oz. second tier, and 1 lb. 8 oz. third tier. Alternative sizes could be arranged as follows:

4 lb. 4 oz. }
2 lb. 2 oz. } to give 12 lb. 2-tier

6 lb. 6 oz. }
2 lb. 2 oz. } to give 16 lb. 2-tier

Single-tiers are made from any of the three bases, so from these basic sizes we can produce five alternative cakes.

A similar procedure is applied to create a variety of sizes with the square cakes. Therefore, having decided on the number of cakes we wish to display, a stock of standard size cakes can now be held instead of making each cake to fit the order; the order now corresponds to the stock size.

Larger Cakes

Larger wedding cakes are made from these bases by layering two together with a thin almond paste. The depth will be 5–6 ins. when finished, but it is far easier, quicker, and more satisfactory to assemble a cake for larger functions in this manner, rather than try to bake an exceptionally deep cake. Not only is time saved but the eating quality is much improved when the cake has not been so long in the oven. It is also far better to handle and easier to assemble.

Hexagonal Cake

A very impressive wedding cake is made by using hexagonal frames or hoops lined as explained above, providing a very suitable base for layering. A cake of this type lends itself to more advanced work, but the finished cake is very attractive and provides unlimited scope for ideas.

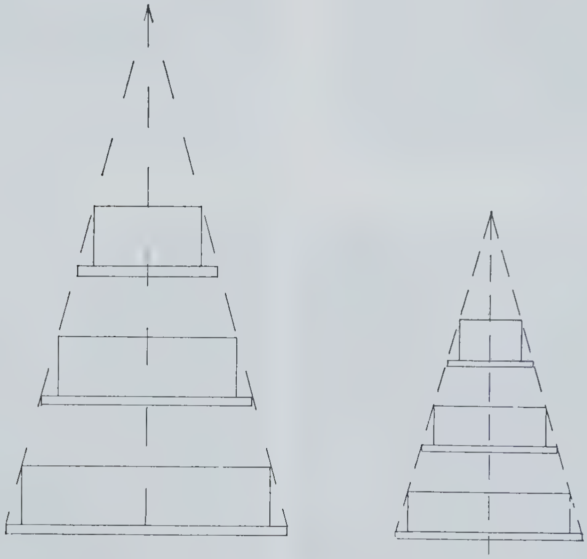


Fig. 2.4 *Balance of a cake within a triangle.*

3 Wedding Cake Manufacture

WEDDING CAKE recipes vary in different parts of the country, and many of the older established businesses have their own particular recipe handed down over the years. A good quality cake is made as follows:

6 lb. Barbadoes or brown sugar
5 lb. butter
1 lb. shortening
$7\frac{1}{2}$ lb. egg
6 lb. straight run flour
1 lb. ground almonds
20 lb. currants
7 lb. sultanas
3 lb. cut peel
4 oz. glycerine
1 gill rum
zest and juice of 4 lemons
$\frac{1}{2}$ oz. Curaçao orange
Black Jack as desired.

The fruit content can be varied from the above mix if required. If the proportion of fruit is increased to 39 lb. this will give 150% of fruit against batter; alternatively 26 lb. as against the 30 lb. recommended will give 100% fruit content.

Method of mixing

First, all the fruits are specially selected and picked over, placed in a stainless steel container, amalgamated with the glycerine and rum and allowed to stand overnight.

The cake is made by the sugar batter process. Having tempered the butter and fat, mix together with the sugar and zest of lemons. Too much beating at this stage will cause the cake to be light. When thoroughly mixed, gradually add the eggs in three stages, making sure each portion is beaten into the fats as quickly as possible, to avoid curdling. Colour may be added at this stage.

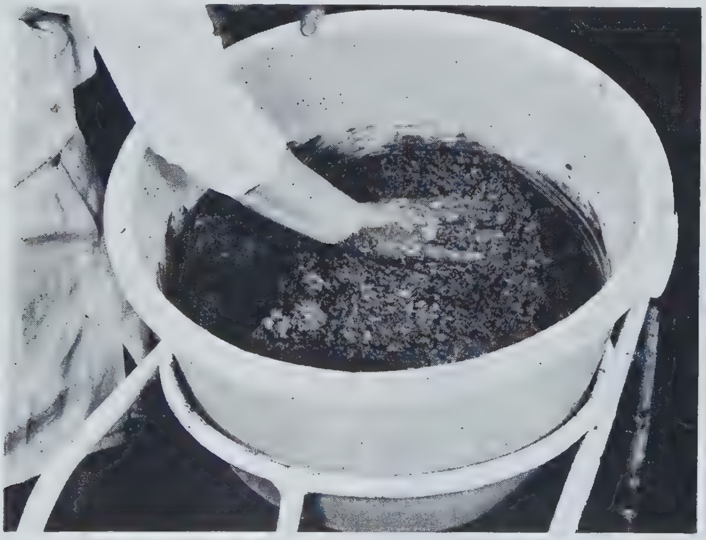


Fig. 3.1 *Mixing of the cake, spreading during mixing.*

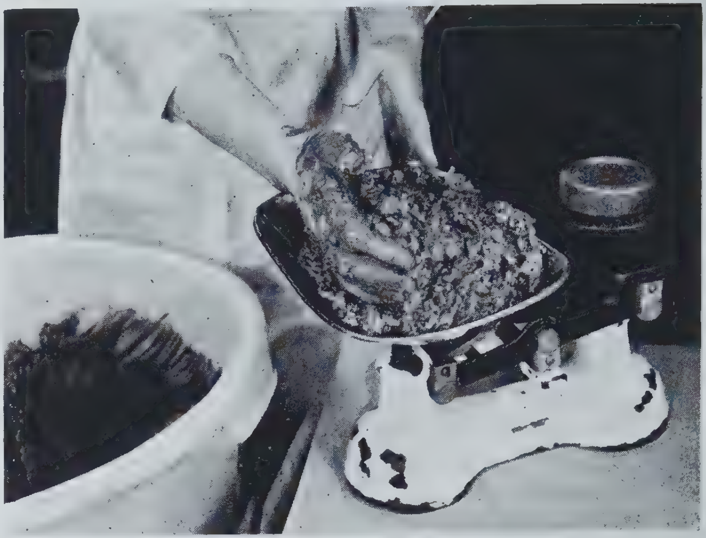


Fig. 3.2 *Transfer of cake to scales, one piece.*

Finally add the juice.

See that the ground almonds are free from lumps, add to the flour, then to the batter. When half mixed add the mixed fruits, just clear and turn into a suitable container.

To ensure thorough mixing and distribution of fruit, it is a good idea to fold a portion of the mix over and lightly spread by hand. Continue this spreading action until the whole mix is cleared, thereby preventing toughening.

The mix is now weighed into the required hoops or frames, and when scaling try to transfer the majority of the weight *en masse*, so that only minor adjustments are needed to make up the correct weight. You will obtain a far better textured cake by this method than by making several attempts to arrive at the weight required.

Now spread evenly, making sure to press into the corners with moistened hand, and finally level with a celluloid scraper.

Baking the cake

If the cake is allowed to stand in the hoops for a while, this has the action of swelling the fruit and is not

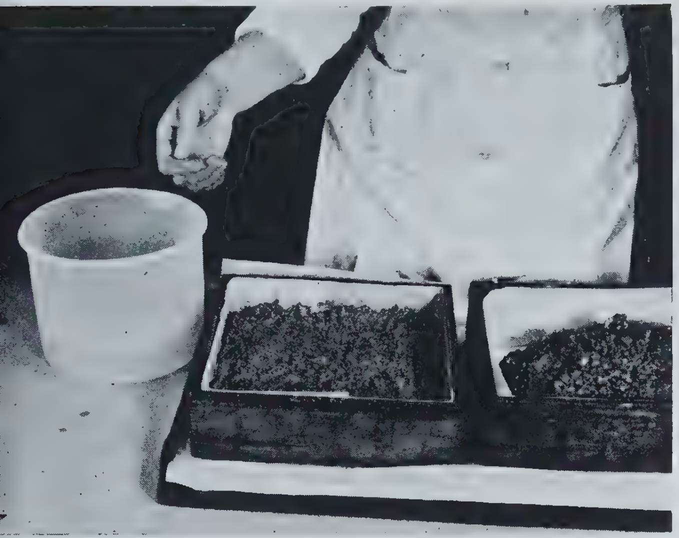


Fig. 3.3 *Preparing to level top with moistened hand.*

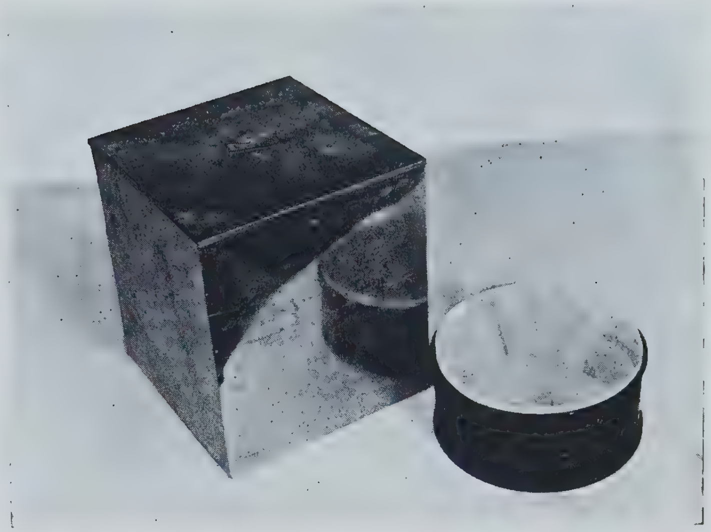


Fig. 3.6 *Preparation of an Exhibition Wedding Cake hoop.*

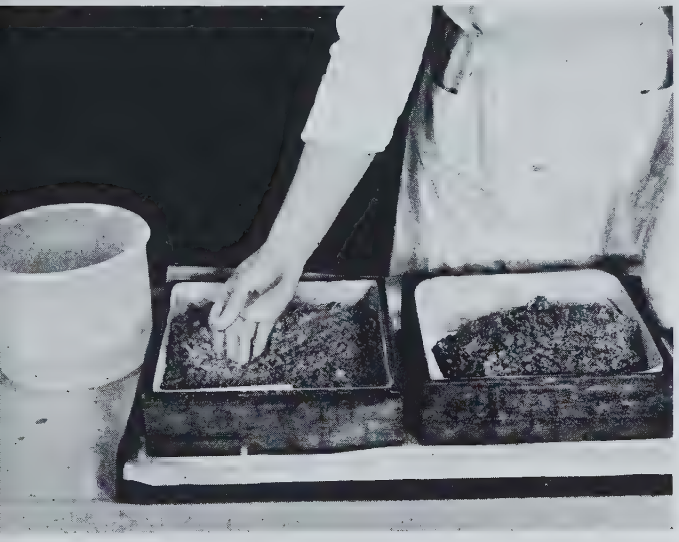


Fig. 3.4 *Pressing into the corners and levelling.*

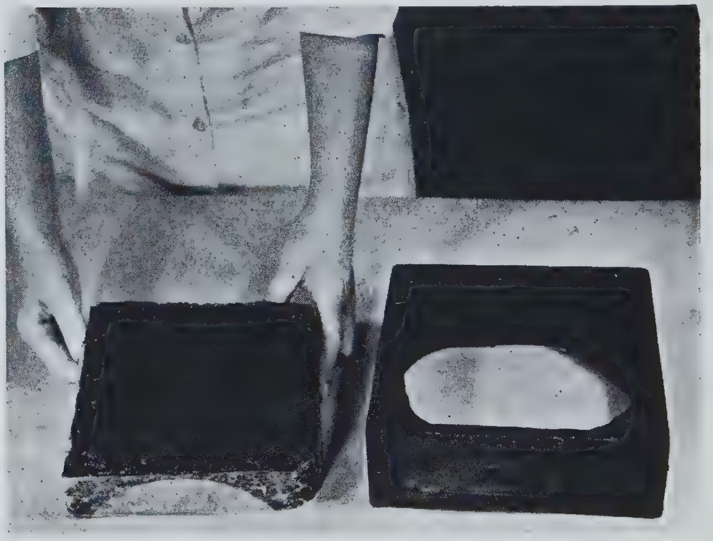


Fig. 3.7 *Removal of baked cakes when cold.*

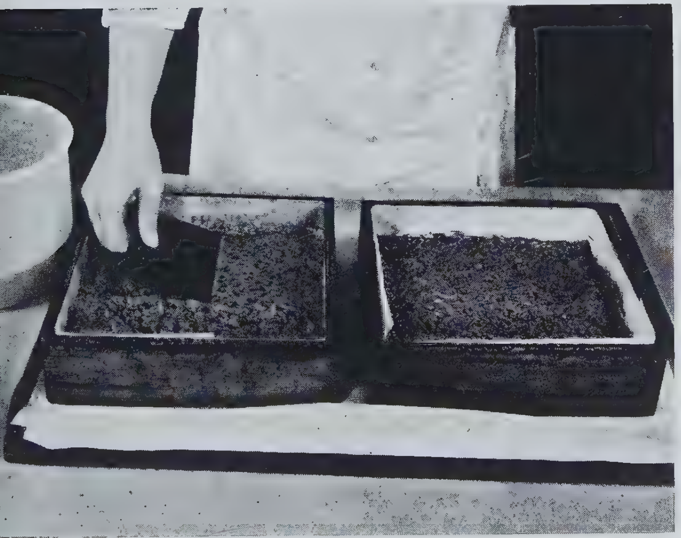


Fig. 3.5 *Levelled with a cello scraper.*

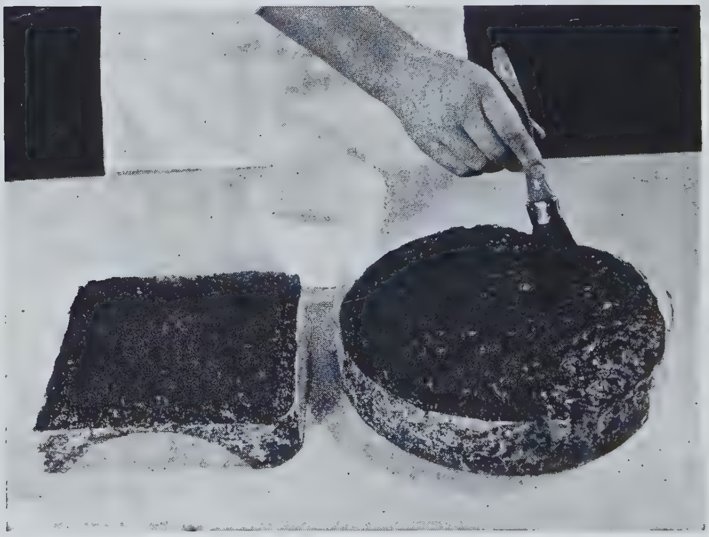


Fig. 3.8 *Brushing tops with Rum syrup.*

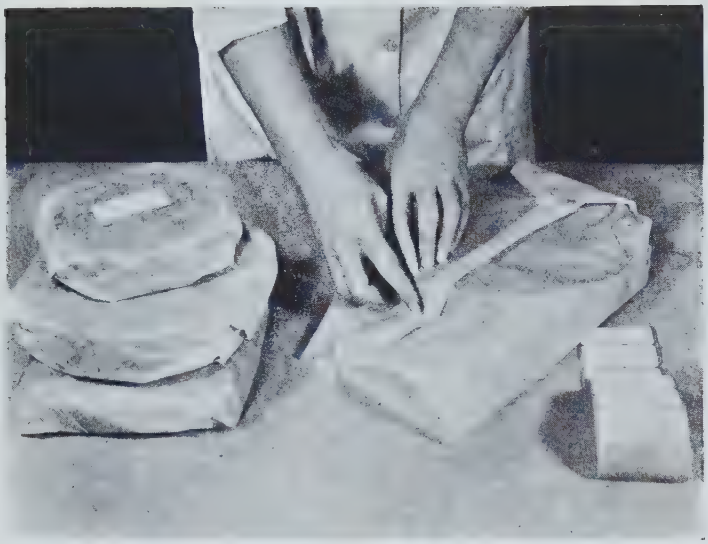


Fig. 3.9 *Wrapping the cakes in greaseproof paper and marking with Delatac date label.*

detrimental to the baking. With care and attention to mixing this cake the method is most suitable for exhibition purposes. Where an 8 lb. cut wedding cake is called for, the cake is weighed in at 4 lb. 4 oz. into a 7 in. hoop, first lined with cartridge paper, then with greaseproof, to obtain a perfectly straight side and to give adequate protection. Due to thickness, care should be taken in protecting it during baking. Cover with a 9 in. deep container but allow a little steam to escape and avoid condensation. Such a cake should have a slightly domed top when baked as against the flat top of a commercial cake.

TEMPERATURES AND TIMES

The baking of wedding cakes is a most important step to success. The oven temperature should be set at 350°F., maintained at 330°F. baking with some moisture present. It is far better to have an oven full of cake in order to bake more evenly. A fast oven may need more protection – you must know your oven.

The baking times at the above temperature will be approximately:

2 lb. – 1¾–2 hrs.
3 lb. – 2½ hrs.
4 lb. – 3 hrs.
5–6 lb. – 4 hrs.

When baked, the cakes should be left on one side until the next day, when they are taken from the frames. It is a good idea to brush over with a stock syrup into which a quantity of rum has been added. Always wrap your cakes in greaseproof paper and do not forget to mark the weight and date of manufacture on each wrapping, to make sure they are used in rotation.

Storing

The bases should be stored in a zinc-lined cupboard in a cool room so that the moisture is retained, thereby ensuring the true mellowing or maturing of the cake. In the past it has been customary to keep cakes months before processing. While this may be beneficial, a month to six weeks should be sufficient to bring the cake to its best. Personal taste enters here in deciding how old a cake should be to reach full maturity.

4 Almond Icing

In previous years the art of making almond paste was as important as the production of the cake. Many ideas on this subject were prevalent and, as with the cake recipes, these were handed down from one generation to the next.

Ingredients

The composition of almond paste was made up of two parts sugar to one part ground almonds, which, when bound together with eggs and yolks, gave a suitable paste of firm consistency. Some preferred an added flavour, such as almond essence, vanilla, rum, or orange flower water.

The danger with this type of paste, unless great care was taken with its preparation, was that signs of fermentation appeared after the cake had been iced. As a result the sugar icing lifted and cracked.

Types of paste

Various sugars were used to give different types of paste, for it was common to use half icing sugar with half castor. This gave a certain grittiness to the paste; some would prefer to say 'a bite'. Icing sugar alone, while giving a smoother paste, would tend to adhere to the palate. The introduction of fondant helped in two respects: the castor sugar was replaced and the glucose content of the fondant eliminated the need for eggs, thus helping to prevent fermentation. If any liquid addition was needed, whites of egg or albumen were used:

2 lb. ground almonds
2 lb. castor sugar
2 lb. icing sugar
6 eggs (approx.)
Colour and flavour as desired.

This was the most widely used method. An alternative, is to use a boiled paste. Simply bring sugar and water to boil, adding a percentage of glucose, and heat to 240°F. Remove from heat after which the ground almonds are stirred in together with a little egg yolk and colour to make a firm paste. The cakes are surrounded by a collar and the required amount of boiled paste is poured in. As the paste cools it becomes thicker until of moulding consistency. This gives a very palatable paste, pleasant in flavour. It is, however, difficult to judge the right amount and is somewhat messy and not so easy as the cold method.

For commercial purposes the manufacture has now been taken over by the producers of almond products and standard pastes are made in a similar way. The sugar and almond are ground and heated with a percentage of glucose and colour. Excellent varieties are now marketed and almost any type of paste is available for selection.

ALMOND CONTENT

The almond content varies and some of the cheaper pastes have a percentage of nuts other than almonds incorporated. In referring to almond paste or marzipan, it is essential to have at least 25% almonds to be within the law, but some of the better pastes contain up to 40%.

Almond paste is the most expensive part of the wedding cake and should be worked with care, and kept free of any crumbs or purée. Cleanliness should be the motto at all stages.

WEIGHT PER CAKE

The amount of almond paste required for each cake is approximately half the weight of cake and this should be a standard guide:

Baked cake	Almond paste
6 lb.	3 lb.
5 lb.	2½ lb.
4 lb.	2 lb.
3 lb.	1½ lb.
2 lb.	1 lb.

So, to execute a three-tier 20 lb. cake, 10 lb. of base cake will need 5 lb. of almond paste. In some instances it is advisable to vary the amount on the top and middle tiers to give a better covering in the base cake, this being dependent on size and finish and to some extent must be left to the decorator's discretion.

To complete the 20 lb. weight the rest will be taken up by the weight of boards and sugar, provided three coats are given. This again is dependent on who produces the cake, for the thickness of icing will be of paramount importance.

Neither the weight of the pillars nor the top decoration is included.

APPLYING THE ALMOND PASTE

Having the weighed cake and the required amount of almond paste, it was usual to boil apricot purée, sometimes with a little added sugar, to obtain a firm adhesion. The boiled purée was lightly brushed over the cake, thus preventing fermentation taking place by sealing the cake from the paste.

Today we have on the market various neutral spreading jellies which are used direct from the container: therefore, boiling is quite unnecessary.

The almond paste is rolled out in circular fashion slightly larger in circumference than the cake. By holding one hand flat on the base of the cake the protruding paste is pushed to the shoulder of the cake by means of a scotch scraper (Fig. 4.3). At this stage it is most essential that no crumbs come in contact with the paste, for nothing looks worse than to see good clean almond paste with dark crumbs embedded.

Always keep your table top well brushed down, use only fine icing sugar for rolling the paste and only sufficient to prevent sticking – not in such quantities that the cake, when upturned, is white on top.

In the rolling of paste, it used to be considered that the best table top was a marble slab which was cool and prevented any friction during rolling. Today we have formica tops, clean and easily kept in good condition. Special boards, topped with formica, could be used if no table is available: plastic covering is clean and can be used for the same purpose, readily wiped, and stored until next required.

Modern materials such as these help considerably in producing a better and cleaner standard of work.

Coating the Sides

To almond paste the side of the cake, the paste is rolled out to not more than $\frac{1}{8}$ in. thickness. The exact depth is measured and cut with a sharp knife. This length of paste is then coated with spreading jelly using only sufficient to cause adhesion to the side. The cake is then rolled on top of the paste in a clockwise direction until the ends meet. Be sure to cut and make a clean joint. A little smoothing with the hand or rolling-pin will give a good straight surface on which to work.

Briefly, approximately one-quarter to one-half of the total amount of paste is required for the sides. After the almond paste is applied the cake should be left for the paste to settle or skin over prior to icing.

The reason for covering the side of the cake is twofold: it first ensures that any grease from the cake does not permeate through to discolour the sugar: secondly it provides a better foundation on which to work.

The exhibition-type cake will show, when the paper is peeled away, a perfectly straight side and the slightly domed top. The baked weight should be 4 lb., and 2 lb. of almond paste is added: roughly one-third the depth of the cake.

The art of sugar decoration has today reached a very high standard. This should not deter the new entrants in the trade, for provided they apply themselves to attaining sound knowledge of the basic principles there is no reason why success should not be achieved.

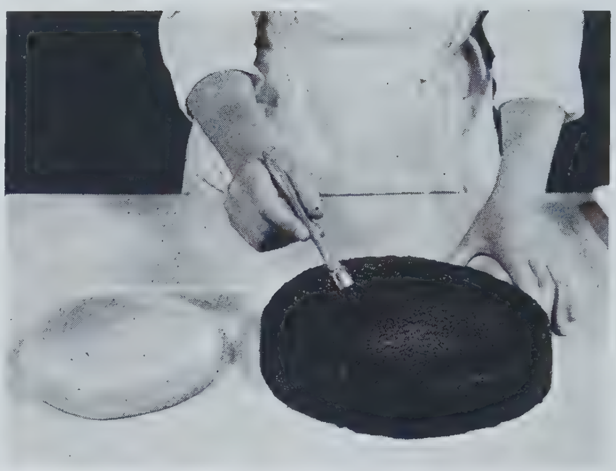


Fig. 4.1 *Brushing the apricot purée on top of the cake.*

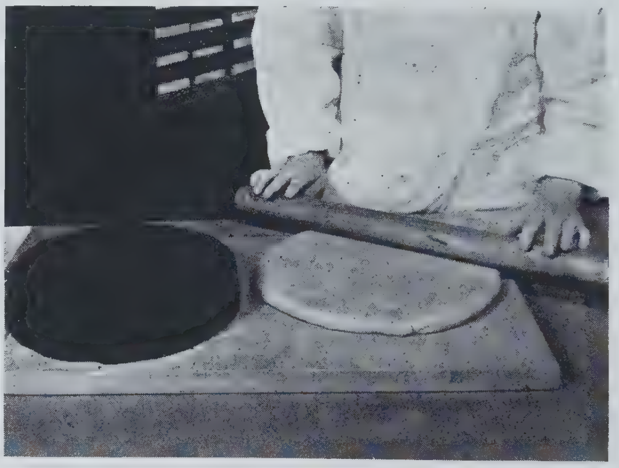


Fig. 4.2 *Rolling Almond Paste in a circular fashion.*

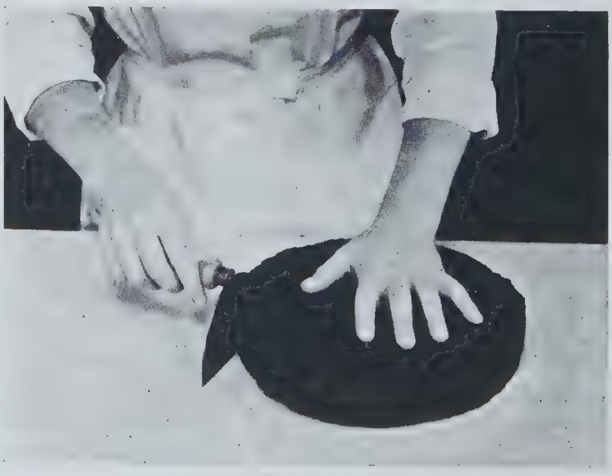


Fig. 4.3 *Squaring Almond Paste with scotch scraper.*

THE ALMOND PASTE

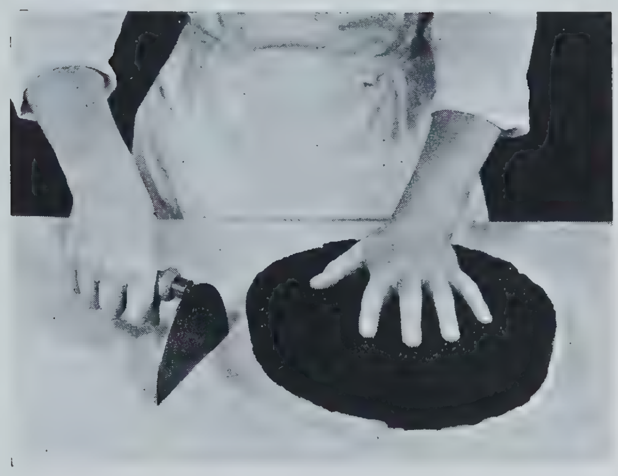


Fig. 4.4 *The paste being brought into line with the cake.*

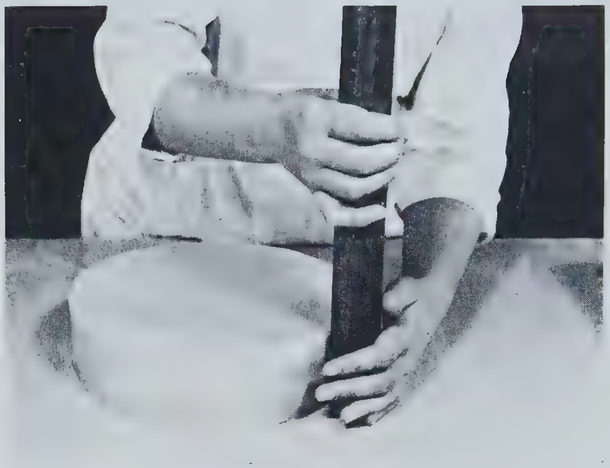


Fig. 4.7 *Securing paste to the side with rolling pin.*

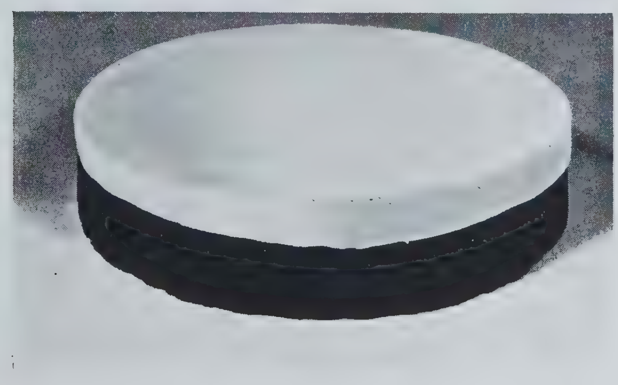


Fig. 4.5 *Completed cake, note thickness o, paste.*

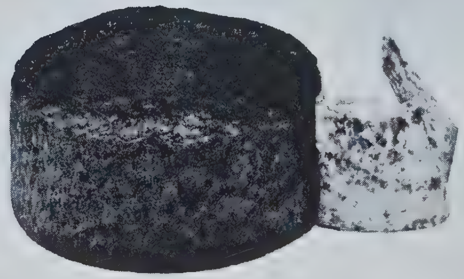


Fig. 4.8 *Exhibition Cake straight side. How the paper peels away.*

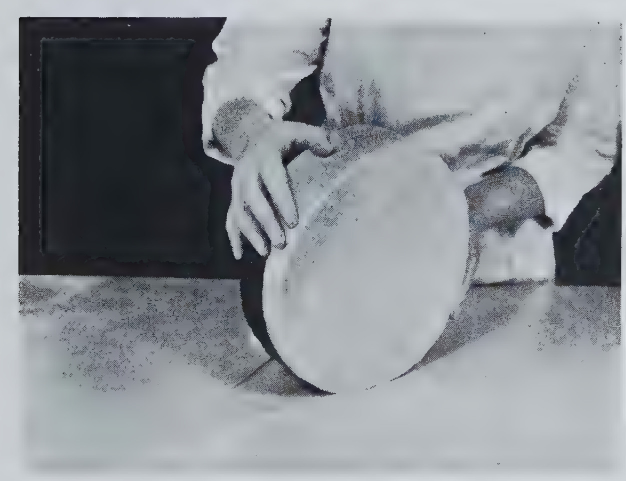


Fig. 4.6 *Rolling Almond Paste round side of the cake.*

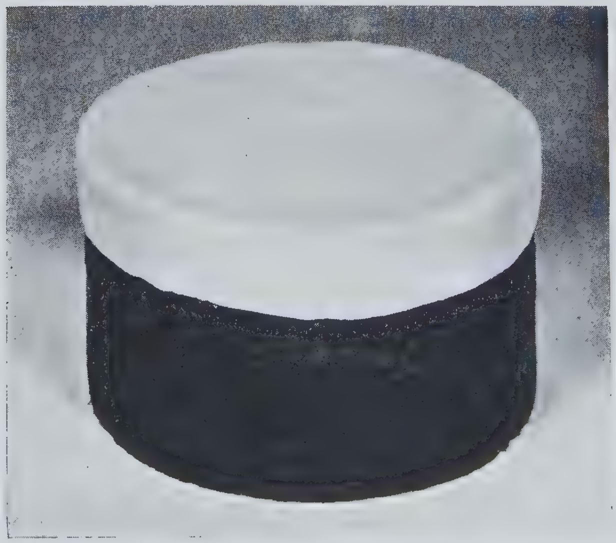


Fig. 4.9 *Depth of paste to cake.*

The progress of the student will be determined first by his gift for drawing and colour, then by the purposeful approach to the subject, and the ability to sustain interest. As progress is made, so the art of decoration becomes more fascinating. The student must at all times have patience, for setbacks often occur. If a person is willing to give time and practise diligently then there is no reason why the knowledge and skill should not be within such a one's grasp. Always use the utmost care and aim to be accurate.

Hasten slowly for the groundwork is the essential basis on which to build. At no time should the learner try to force his rate of progress. Concentrate at every stage, and with practice, assurance and speed will come naturally. Where students adapt themselves in this way, and given the ability to perceive, to observe natural surroundings, the seasonal changes of nature in time and movement, they will pave the way to faithful reproduction. It will also give the added ability to adapt the original form to a new design in any sphere of decorative work.

Fig. 4.10 *Exhibition cut Wedding Cake.*

5 Royal Icing

To commence our work, it is necessary to prepare 'royal icing' and, as with the cake making, a careful selection of the correct materials is of the utmost importance. The quality of materials used reflects only in the quality of work when completed. The highest degree of craftsmanship is required, therefore we must always obtain the highest qualities at all stages.

Icing sugar

Icing sugar is marketed in various grades, but for this work, only the finest milled sugar is required. A good deal of progress has been made in recent years with the preparation of icing sugar and it can be bought in various containers and quantities.

In past years, sugar was put up either in drums or bags while some of the finer milled sugar was sold in tins. Depending on the amounts required, we must decide how to buy.

Sugar compresses under its own weight; therefore, if bought by the hundredweight, a fairly regular usage is required, otherwise the sugar will tend to become lumpy and will need to be finely sieved before use. This, although practical, is detrimental, for however carefully you sieve there are always fine particles which will not dissolve thoroughly and in effect the fullest volume and air intake is not obtained. Therefore sugar is better bought by the 28 lb. tin and stored in a dry place.

After the container is opened replace the lid as soon as possible to prevent the sugar taking up moisture from the atmosphere. To keep the fine particle size and to prevent the sugar caking some manufacturers include a percentage of calcium phosphate. Sugar so treated remains in its free state and is always ready for use, thus eliminating any sieving – a standard we should expect to receive from the manufacturers.

Colour should always be of a good white and become lighter during beating. Beware of sugars which result in a greyish appearance. If the sugar is not of good colour no amount of beating or colouring matter will alter it. Sugar must at all times be of the finest texture.

Types of egg white

This medium, used in the making of royal icing, is classified in three distinct categories: the egg white taken from a hen's egg, whites dried in the form of albumen, and various preparations on the market.

'Icing' refers to sugar in its original dry, pulverized form, and from this ingredient, together with other additives, we produce 'royal icing' – a prepared medium for cake decoration. Varying consistencies of this medium are termed 'sugar'; for example, if the medium is tightened or firmed by the addition of dry sugar the resultant mix becomes a *sugar paste*, while if it is softened by various degrees of moisture it is termed *soft sugar*. Yet another form of 'sugar' is *fondant*, which also varies in consistency.

The terms 'icing' and 'sugar' or 'sugar mix' are therefore more or less interchangeable when discussing the decoration of cakes.

Let us for a moment consider fresh white of egg as this was the first medium used in this work. We were taught that from the outset every piece of equipment should be scrupulously clean and free from grease, which prevents adequate aeration. Therefore, in the first instance, it was essential to be sure that in separating the whites no particles of yolk remained, for this had the effect of grease and prevented the whites from beating correctly; we are now able to purchase frozen whites, which, when defrosted, are better than the whites from fresh eggs.

It was always an advantage to let the whites stand awhile before use, yet whites that become old not only have an odour which taints the sugar but are watery and lack beating power. It was generally accepted that one or two spots of acetic acid not only helped in the beating but gave the sugar a setting quality. Icing so made, however, became hard and flinty and has no place in present-day practice.

DRIED WHITES

Dried whites, in the form of albumen, were always at hand but needed to be soaked overnight in an earthenware vessel. After adding 1 pint of water to 3 oz. of albumen and giving a good whisk, this solution was left until the next day, when it was sieved or strained prior to use.

Whites reconstituted in this manner were much better for beating. Such whites not only gave extra lightness but were far more pleasant to the palate and of exceptionally good colour. However, if these whites were allowed to stand for a day or two you would notice the same off-flavour and slight discoloration as with fresh whites, though the beating quality was not impaired.

Icing made with the dried whites has all the characteristics of fresh whites.

In recent years dried whites have been supplied in exceptionally small particle size. The advantage here is that powdered whites are so much more easily dissolved and, if left in a slightly warm place, can be used in a matter of hours.

Often there was a danger by other methods of not having sufficient whites prepared, but this fine powder is easily and quickly made ready for use. Although more costly at the outset, prepared whites can be used as low as 1½ oz. to the pint, but this must depend on what type of work is required and should not be accepted as suitable for general purposes, although 2 oz. to the pint is a very practical proposition.

Powdered whites are the best preparation for royal icing. They are easily soluble and produce the best beaten sugar. Other substitute preparations have their uses but while supplies of genuine whites are available these should be given preference, and strained before use in every instance.

TO IMPROVE WHITENESS

To improve the whiteness of royal icing a little blue may be added in the form of either liquid or powder. Liquid may be measured by means of a dropper. Powder blue, not so soluble, is best added to a small quantity of sugar and thoroughly mixed: from this a weighed amount can be added to a given mix of sugar.

Blue improves whiteness but care should be taken to see that it is not overdone. Too blue a tint looks even worse than no blue at all and certainly has a detrimental effect on other colours. Different shades of white should never be allowed: always have a standard white.

When icing is made in small quantities, it is ideal to have each mix of the same colour so that there is no variation in the different tiers. Different shades of blue on the same cake must be avoided. To give the desired whiteness, the beaten icing should look slightly blue; the brilliance of the whiteness is developed during the beating.

Making royal icing

There are various ways of beating sugar and the one the student should know is the making of royal icing by hand. This method is also used in present-day exhibition cakes but here there is no addition of acid.

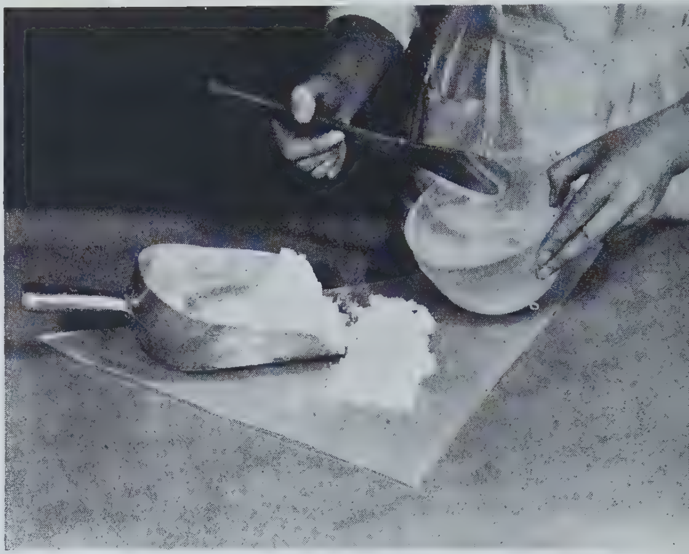


Fig. 5.1 *Whites and sugar.*

Hand Method

To a small quantity of strained whites add a little sugar and start beating. Add a little more sugar as the mix becomes lighter, plus a spot of dilute acetic acid. Continue to add sugar and beat in a circular fashion with a lifting action until a light peak is reached. By this method one can control the air intake, because for exhibition cakes the sugar does not want to be fluffy but rather to have an overall equalization in cell structure.

Machine Method

The second method is preparation by a small electric table machine, which is probably the most widely used today. Place in the machine 1 pint of liquid whites; these will require approximately 7 lb. of finest icing sugar. Add one-third of the amount to begin with and start beating on medium speed. As the volume increases, gradually add the remainder of the sugar until the desired lightness is obtained. The mixture should hold its form when shaken from a spatula.

Just before the icing is ready the addition of 2 oz. of glycerine will help to achieve a lighter texture and will prevent the icing from becoming hard or flinty but just firm enough to hold the tiers; when dry it can be powdered between the fingers. This is a very good commercial standard mix. Extra glycerine will keep the sugar even softer but it is a disadvantage when the cake has to be tiered. Atmospheric conditions must also be taken into account: too moist an atmosphere must be guarded against and if necessary the quantity of sugar reduced. The idea is to have just sufficient yet have the icing strong enough to hold the tiers. Icing so made should always be on the medium speed of the machine, for on top speed the tendency is to get it too light.

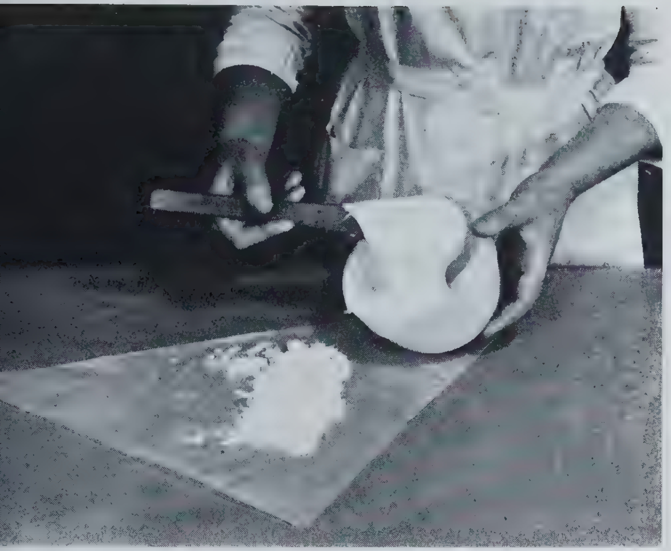


Fig. 5.2 *Added sugar.*

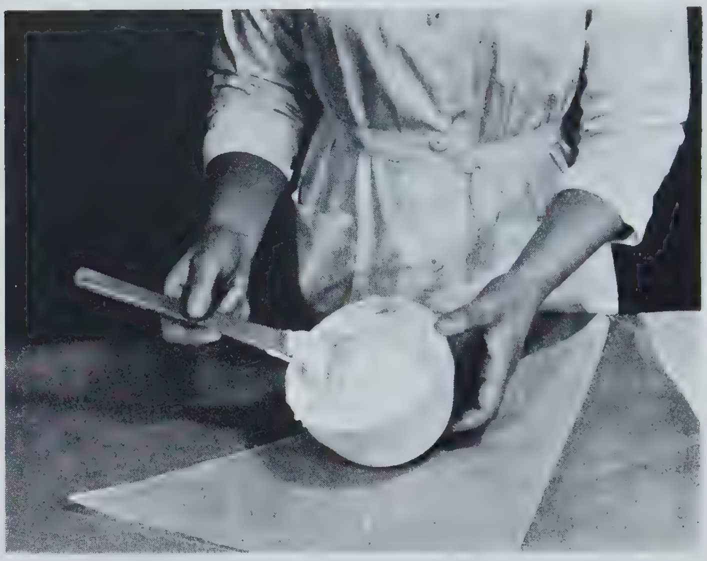


Fig. 5.3 *Lightening the sugar.*

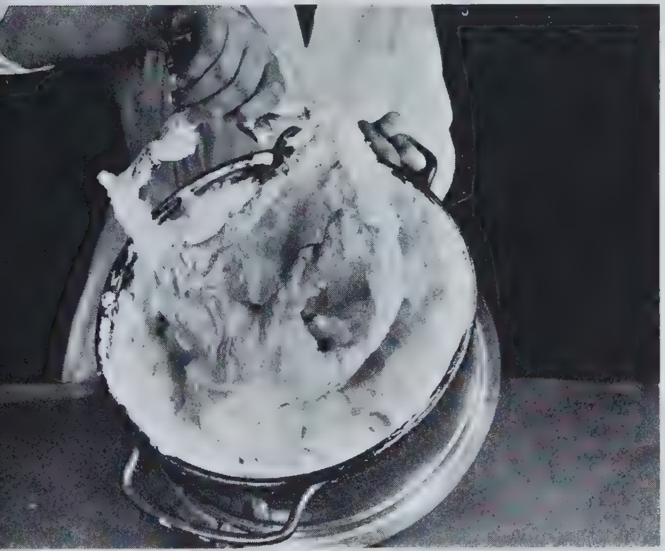


Fig. 5.4 *Small machine, sugar from spatula.*

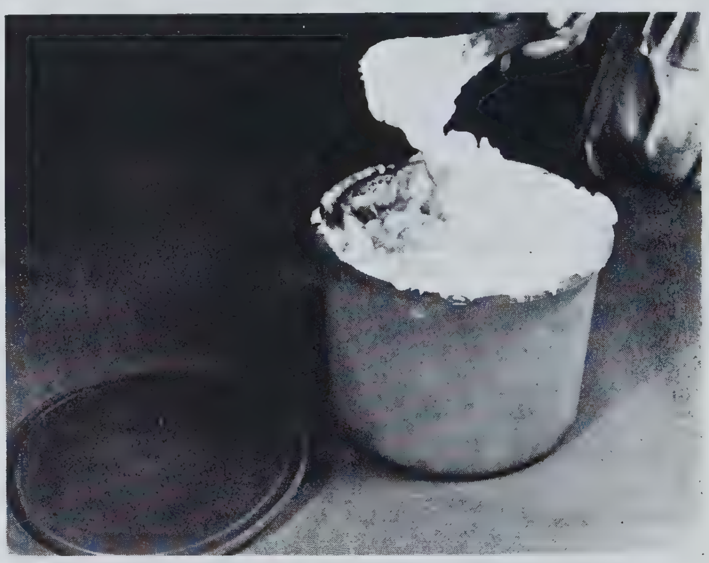


Fig. 5.5 *Polythene container with lid.*

Always transfer the icing to an earthenware or polythene bowl.

Larger quantities are made with a larger vertical machine. This has a wider ratio of gears, thereby allowing a slower, smoother action during beating. The big manufacturers use this type rather than the ordinary bench model.

Some years ago I remember we made up a 3-pint mixing at the beginning of the week by adding approximately one-third to one-half of the sugar and beating on fast speed until a very light mass was obtained. It looked to all intent and purposes like a very light meringue. This sugar was stored in containers until the next day, when all that needed doing was taking the required quantity, adding a little blue and just tightening by hand with further sugar. The advantage of such a mix was that, provided it was suitably covered, it kept in perfect condition throughout the week. By this method sugar could be made at the end of the day or probably twice a week. The amount of time saved was surprising, and the icing was much easier to prepare and to manipulate during usage.

This is, as it were, a general purpose sugar, for, used with small additions, it can be coloured to daily requirements.

Points to Remember

Icing should not have blue added if it is anticipated that colour work will also be needed for blue destroys some colours; therefore a neutral shade should be the first step in colouring cakes.

Whatever method is used the icing should be perfectly made with a good degree of lightness and whiteness, for this not only becomes easier to work with but it will look clean and help in every respect to perfect the quality of work, and maintain a clean working condition. It is surprising how the work benefits as the medium improves.

Cleanliness must be the objective right from the start. The larger type machine bowls have many uses: therefore it is imperative that all grease, etc. is removed by scalding out, rinsing with cold water and drying thoroughly with a clean cloth. Remember to give the beater the same treatment. If these requirements are not carried out, the icing will tend to pick up some discoloration from the side of the bowl, giving various degrees of a metallic colour which prevent the sugar taking in air during beating. It will finish with a dirty grey colour, lifeless, and will dry very hard. No amount of work can put this right: prevention lies in paying attention to the cleanliness of the bowl, the machine, and the receptacle used for dissolving the whites. One cannot stress too much, the importance of such measures.

Icing should be porous, due to the lightness and beating. It is best worked the next day – particularly for the first stages of covering the cake – but some of its porousness can be taken away by stirring in a little dry sugar.

Where glycerine is used, this, with its hydroscopic nature, will take in further moisture from the atmosphere, which delays the setting qualities of the icing, thus preventing any quick drying out. The icing does dry but remains soft and palatable and is easily cut, but there are no signs of hardness.

Experience will show you the way to success. Adapt yourself to the correct way. You will then become accustomed to it and any diversification can soon be remedied.

6 Selection of Equipment

The preparation of royal icing has now been fully dealt with and we must transfer our attention to the receptacle in which it may be stored. It was always accepted that an earthenware bowl covered with a damp cloth kept the icing in the best condition, but with modern developments we are able to make use of modern plastics.

Containers for icing

Industrial containers are made of rigid polythene and are tough yet light, non-breakable, and stable in shape over a wide range of temperatures. Polythene bowls are also resistant to most acids and alkalis; they can be purchased in any manner of sizes and even coloured to suit our particular needs. Some may be in the shape of a small drum. In many instances they are complete with lids, and provided a damp greaseproof paper is placed on beforehand the condition of the icing should be correctly maintained. Many sizes of basins are also available, which will meet all requirements.

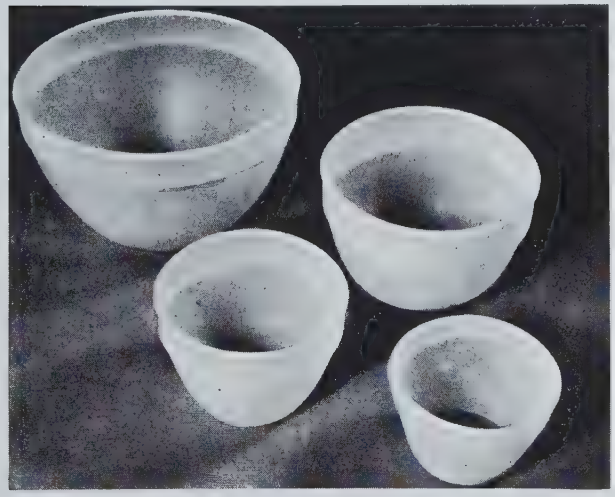


Fig. 6.1 *Various sizes in Polythene basins.*

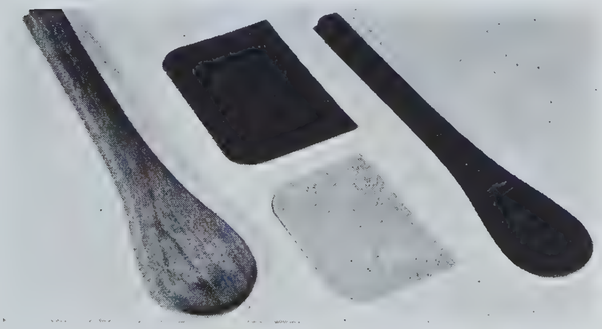


Fig. 6.2 *Spatula.*

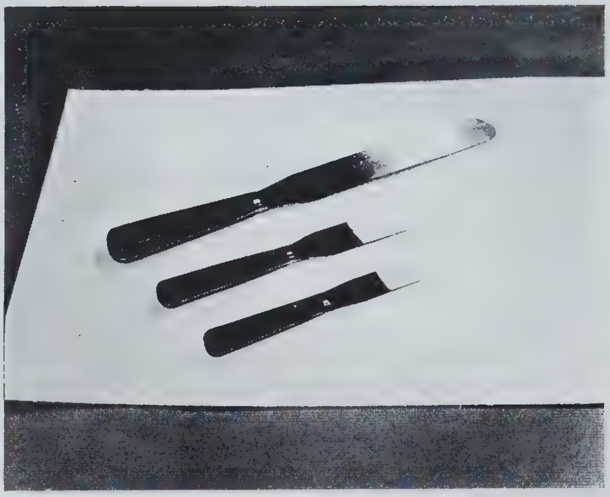


Fig. 6.3 *Palette knives of stainless steel.*

If lids or closures are not available, then we must revert to a coverage of damp paper and a slightly damp cloth. The idea of first placing the paper is to prevent the icing adhering to the cloth. If cloths are used, they should be laundered very frequently.

Spatulas

For the beating of small quantities of icing by hand, the transfer of icing from one bowl to another, and the stirring in of dry sugar and colour, we need a spatula. These exist in various sizes, are made of wood (mostly beech) and are very easy to handle. Beware of leaving a spatula continually in the icing for this will become discoloured and gradually go black. When the work is finished, it should be taken from the sugar and thoroughly cleansed.

Spatulas are very serviceable, and if taken care of, will last a very long time.

Knives

We know that, should an ordinary knife be used in the sugar, the acid works upon the metal causing rust and discoloration which affects the icing. But nowadays we have a variety of stainless steel palette knives which

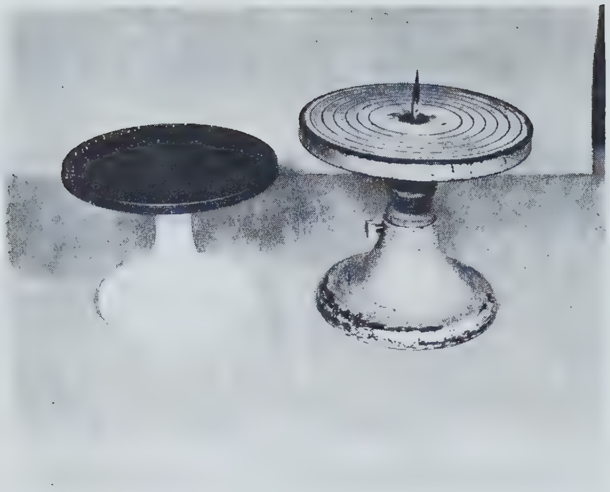


Fig. 6.4 *Turntables.*

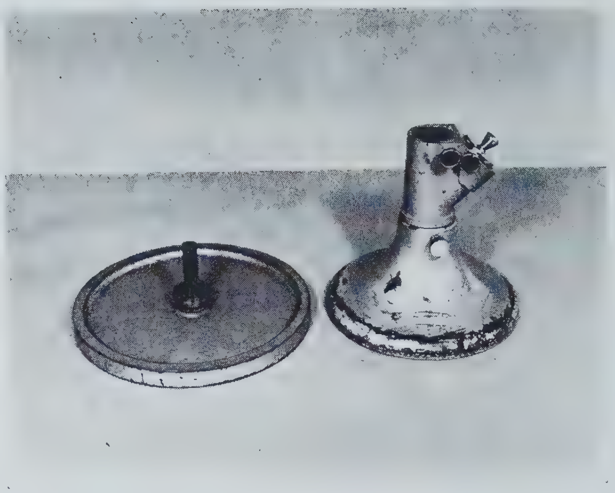


Fig. 6.5 *Turntable separated, showing the insert at an angle.*

are suitable for using in the icing as well as for the coating of the cake. We must use a knife to spread the sugar evenly, especially over a large surface, and the larger the cake the larger the knife should be to give a smooth finish on the top. The sides again are smoothed with a 6 in. palette knife or a celluloid scraper: such scrapers are obtainable in two or three sizes and the larger are more substantial and will not bend under pressure, thereby giving a perfectly straight side.

Turntables

To facilitate the icing of a cake and to obtain a perfectly covered cake we must do this by turning or spinning on a turntable. By turning with the left hand clockwise, and holding the knife or scraper against the side in a perfectly upright position with the right hand, a combination of speed and pressure will give the covering desired. Let us consider the turntable, which is made in a variety of ways. Mainly there are two circular pieces of metal, the top revolving by means of a central spindle in a socket and the weight mostly contained in the base. Such a table becomes quite rigid and does not move under pressure although it is liable to develop a wobble.

A more advanced turntable is composed of a stout metal top with a short spindle fitting into a stand; in some instances a ball-race is used to enable the table to spin evenly and smoothly. These are the better tables but they need a little more control.

For the very experienced craftsman certain turntables have a double socket for the spindle, one at an angle of 45 degrees with a spike screwed into the centre of the table, and, provided the cake is placed on a drum board, it is possible to turn it at an angle to enable the work on the sides to be done more easily. This of course has its limitations as to size, but a 12- or 14-in. board is manageable provided a good sugar base holds the cake in position. This type of turntable also has its uses in preparing exhibition cakes, for with its smooth running it becomes a precision tool.

Another lower type of turntable around 12 ins. in diameter and 4 or 5 ins. high is very useful where top decorations are the most important.

As long as the turntable spins smoothly and has sufficient weight to anchor it, you should be able to manipulate the cake to the best advantage. The question of being able to turn the cake on its side must be left to the individual.

Piping tubes

There is a wide variety of piping tubes available, mostly made of nickel-plated metal. These are thoroughly reliable and, if taken care of, last a considerable time. At one time tubes were made of brass, but they corroded owing to the action of the acid on the copper and so were replaced with nickel. Different makers have different tubes and a careful study is required in order to choose the right type. Briefly, piping tubes are divided into three categories: plain, star, and petal. Outside these varieties a few fancy shapes exist, but are only used if a specific pattern is required.

Commencing with the *plain tubes,* as the number increases so does the size of the aperture, No. 1, 2, 3, and 4 are the main ones used for our daily commercial work, while we can obtain much finer tubes such as 0 and even 00. These are only used for exhibition cakes and work of a very delicate nature: such work, perhaps more tedious, creates a finesse, a mark of perfection. Nickel tubes are the better shape and fit the paper bag

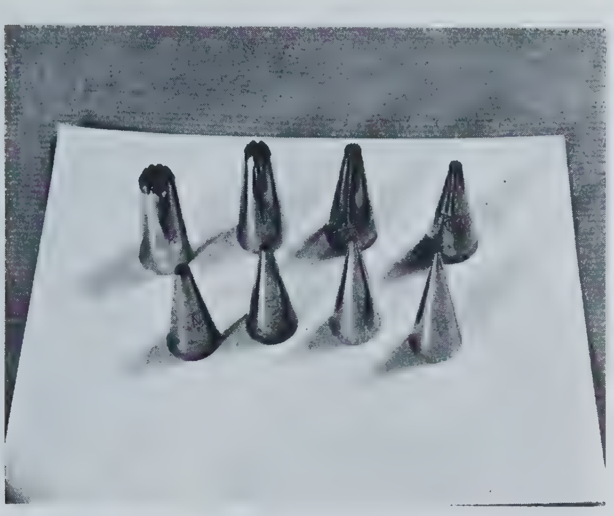


Fig. 6.6 *Plain piping tubes, star tubes.*

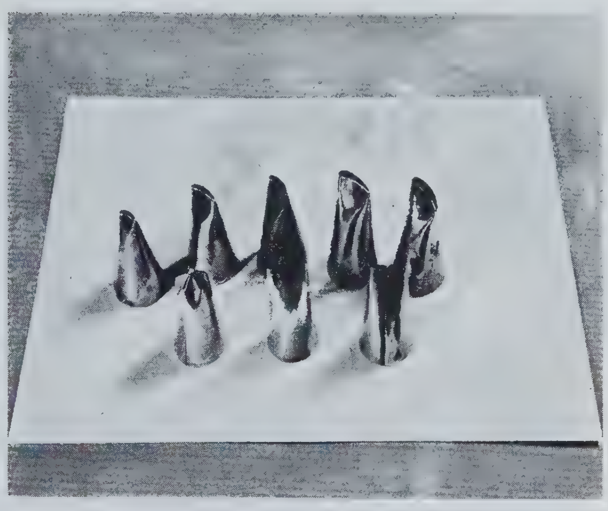


Fig. 6.7 *Flower-making tubes. Ribbon and leaf making.*

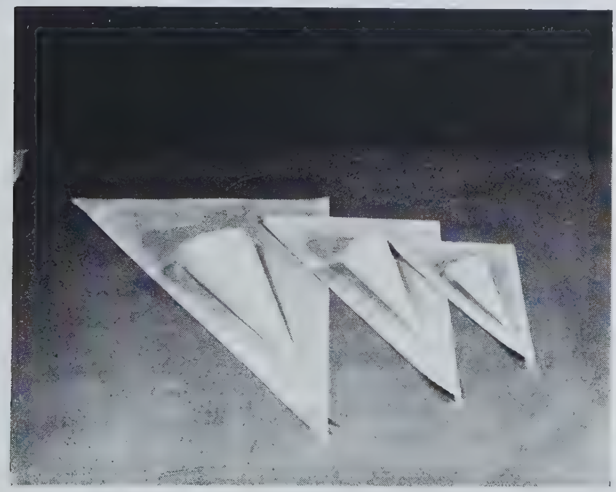


Fig. 6.8 *Various sized piping bags showing each size complete.*

more readily. Always ensure that the join down the side of the tube is well made, for if not, particularly in the finer tubes, as the sugar is piped, the end will curl, to result in imperfect piping.

Star tubes are perhaps the most widely used for they form the basis of many piped designs and a base on which the plain tubes are built. There is a wide choice of such tubes and again care must be taken in selecting. From a six-pointed star to a thirty-two-pointed star there are many types. To start with the largest thirty-two point, these are very finely cut. This means that the depth of cut into the metal is very minute and, when piped, only just shows the marking on the piped line. Although fine, yet quite definite, this type of tube is recommended, for not only will a border be completed with one piping but it also provides a good foundation upon which to build with plain tubes. They will stay in position when they are piped. The coarser type, six- or eight-point tubes, although a pattern in themselves, are not the type to use when a plain line is added on top. The line will topple over and the correct line for piping cannot be made.

Try to have a range of the finer cut tubes, for they will serve a dual purpose, being used for either a complete border or one item on which to build.

The third type is not used so widely and the tubes are known as *petal tubes*, so called because they are mainly used in the making of flowers (though some very useful commercial designs will be seen at a later stage).

Other varieties include the *ribbon tube* used in the making of flower baskets. There are *shell tubes*, which pipe a fluted shape with a flat base, and a *horseshoe shape* suitable for fancy borders.

These tubes have their limitations and are included to make a variation from the better known commercial types; they are only of real use in the hands of an experienced craftsman, but trying out the different shapes gives a certain amount of pleasure.

MAKING THE PAPER BAGS

For everyday use of the piping tubes, we require the tube to fit into a paper bag made from a standard sheet of greaseproof paper. Good stout paper is required, for this not only gives strength to the bag but enables it to be made correctly. You cannot make a good piping bag from limp paper. Pressure during piping is likely to burst the paper.

All bags are made of a triangle with sides of different length, cut from a rectangular piece of paper. If a standard sheet of greaseproof paper is folded in half and then cut diagonally from corner to corner, this will give the larger bag required. The second size is simply made by folding the paper into four, rectangularly and again cutting diagonally. For the third and smallest size, the paper is folded into eight and then cut corner

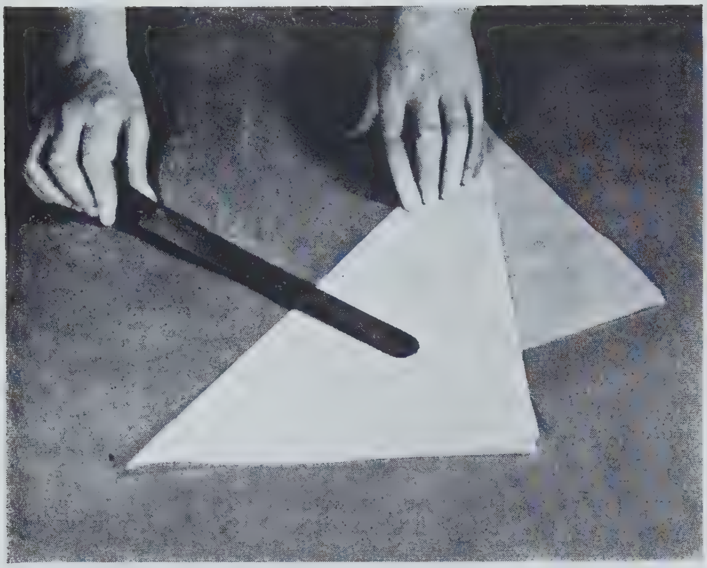


Fig. 6.9 *Making bags. Movement of the knife along the edge, prior to cutting.*

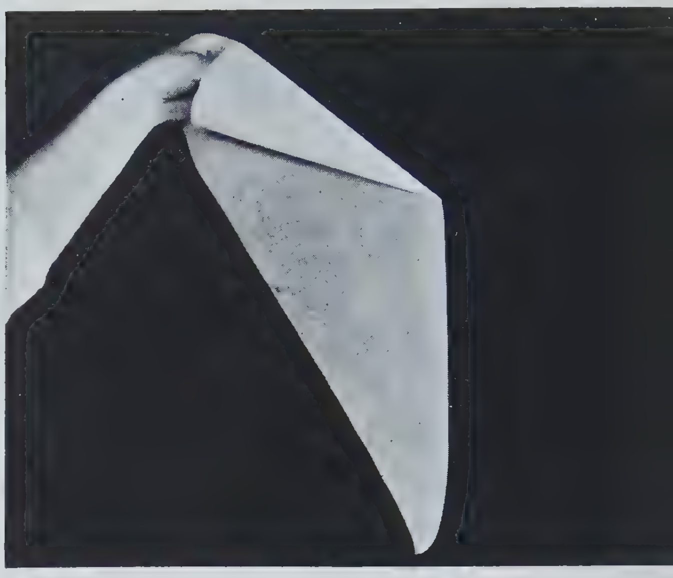


Fig. 6.10 *Making bags. (Stage 1.) Held by left hand.*

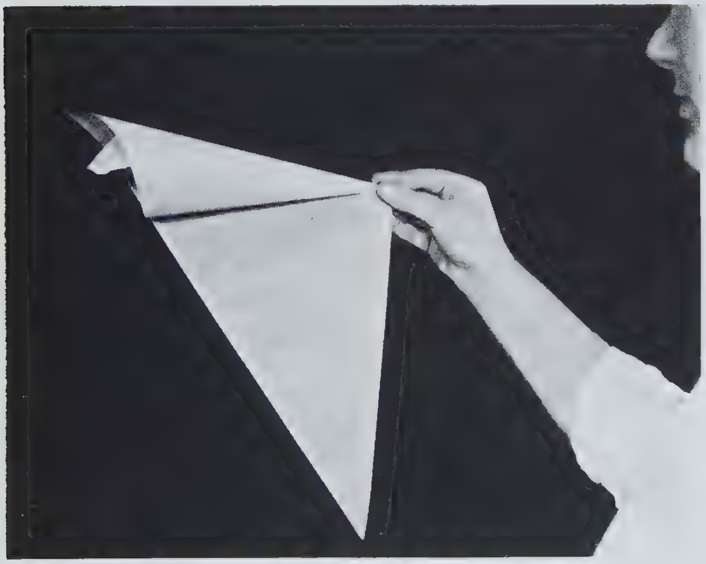


Fig. 6.11 *Making bags. (Stage 2.) Held at point.*

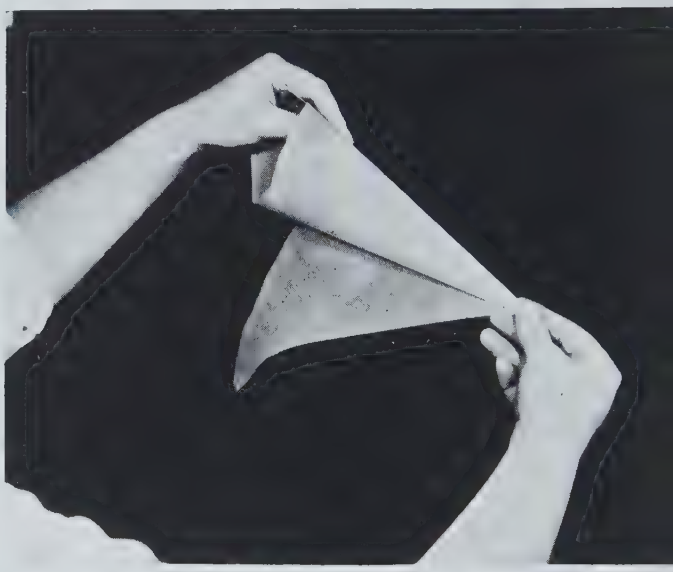


Fig. 6.12 *Making bags. Shows the rolling and take up of paper.*

to corner. When cutting the paper, always press the knife along the fold so that a perfectly straight edge can be cut. The edge must be straight and sharp – otherwise the folding will not give the correct point.

If the cut piece of paper is pierced in the top corner, the pieces can be easily hung until they are needed. There are several ways of making a bag but, as a guide, if the longest and straightest edge is held in a perpendicular fashion, the top corner is folded over with the thumb and forefinger of the left hand to make a cornet, the point of which is held lightly with the thumb and forefinger of the right hand. Just hold the point in position and you are then able to roll the bag with the thumb and forefinger of the left hand until all the paper is taken up. What was the lower corner, just wraps over to keep the bag in position.

Do not make the cornet too wide to start with and make sure that the point is just held in position. Avoid any pressure; if rolled correctly, the bag will be tight with a very sharp point. This means that, when filled with icing, the point must be cut to allow the tube to be inserted.

Although other methods of making exist, this proves to be the easiest and most reliable. Large and small are alike and are simple to manipulate. It is a good idea for the student to practise the making of bags in any spare moment.

Remember, too, that the larger bag must be used for the larger or star tubes and, as the size of the tube becomes smaller, so does the size of the bag. Do not overload the bag with icing for, although likely to escape from the top of the bag, extra pressure will be required to force the icing through the tube and that, in turn, will cause unnecessary strain on the wrist and hand and ultimately some pain. Under such conditions it is impossible to hold the hand steady and pipe correctly.

The smaller the tube the smaller the bag and the more easily the work is accomplished: a point that cannot be overemphasized; as time goes by its value will be realized.

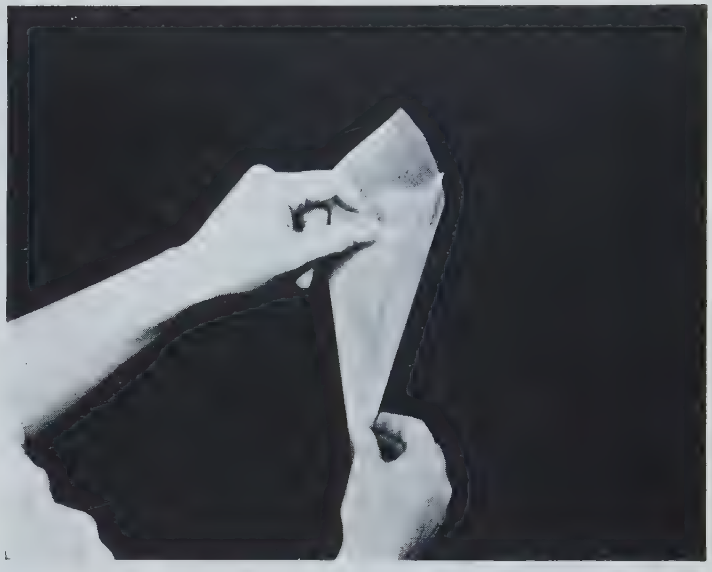


Fig. 6.13 *Making bags. Folding in the last corner.*

7 Elementary Piping

A SERIES of preliminary exercises is designed to provide the beginner with a sound basic training, the groundwork of which must be fully understood; as progress is made,.a steady development in the art of sugar piping will be assured. There is no easy or quick way to success: slow methodical practice is the surest way. Concentrate on every exercise and be sure you are able to execute them with thoroughness before attempting to advance into more difficult or intricate work; simply because a variety of lines look more attractive it does not necessarily mean that this is easier to accomplish. Some work in particular should be practised over and over again, for this forms the basic principle upon which all piping, elementary or advanced, is based.

HOW TO BEGIN

At this early stage we must first acquire something on which to begin piping. Some schools provide a turntable which is usually dark in colour to show up the piped lines, but only use a turntable if it has no ridges on top. One point against the turntable is that at this juncture we need to be perfectly still to gain confidence, so therefore it would be better to try a miniature blackboard. If this is not available, then use a piece of dark photographic paper pinned at each corner to a drawing board. This latter method is the one which is shown in Figs. 7.1–7.6. First draw a perpendicular line on the paper in white pencil as this will act as a good guide from the start.

Piping lines

The first exercise will be with a plain tube No. 2. Use the small size of paper bag and cut off the point ¼ in. to allow the tube to fit in neatly and tightly. If your paper bag is made correctly it will remain perfectly taut and not show signs of loosening. Three-quarters fill with icing and fold in the top so that it is fully enclosed. The method of holding the bag in the right hand is to place the thumb on the top of the fold and the first finger down the length of the bag. The second finger rests on the underside. The left hand can be held by the other fingers to give guidance and steady the piped line. To commence piping the sugar is pressed through the tube with the thumb from the top of the bag, and to stop piping the pressure of the thumb is released and the sugar ceases to flow. You will now see the difficulty of having too much sugar in the bag – it becomes absolutely uncontrollable.

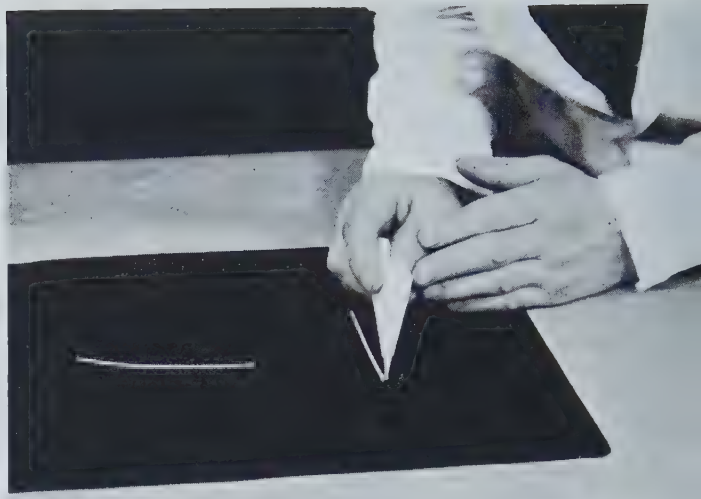


Fig. 7.1 *Point of tube on paper, position of hand.*

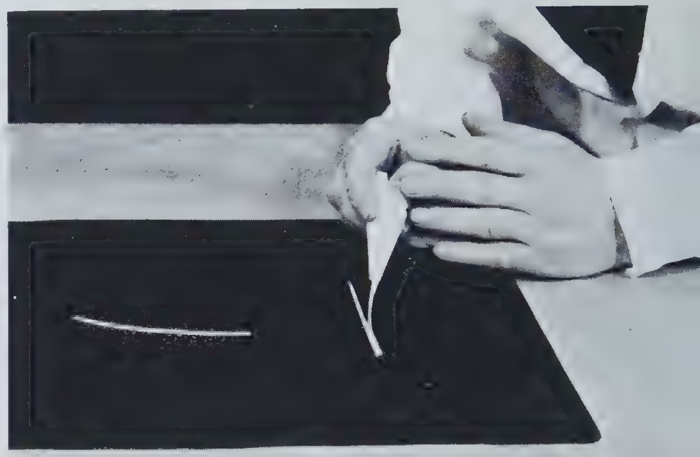


Fig. 7.2 *Position of fingers when piping. (2) Lift and suspend. (3) To give guidance.*

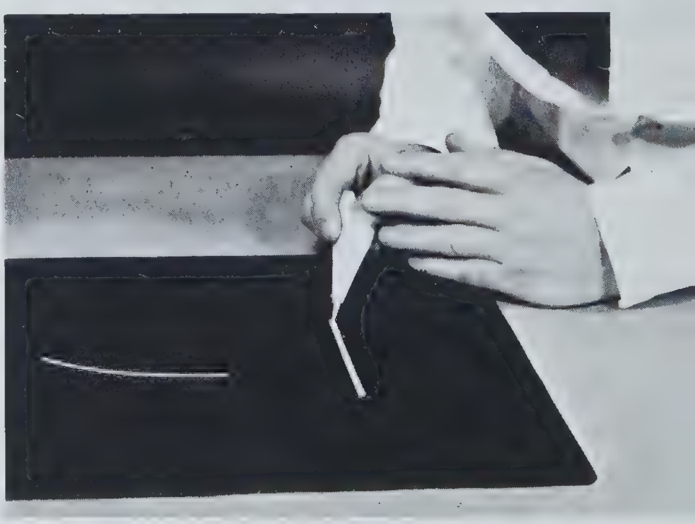


Fig. 7.3 *Completed line, pressure released to finish.*

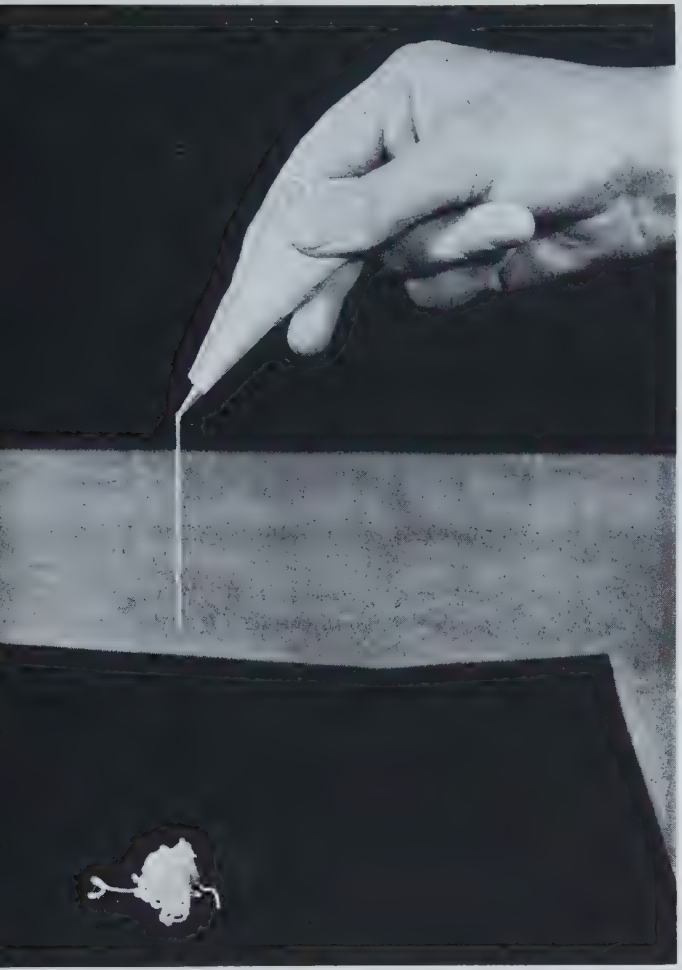


Fig. 7.4 *Pressure exercised to give a smooth continuous line.*

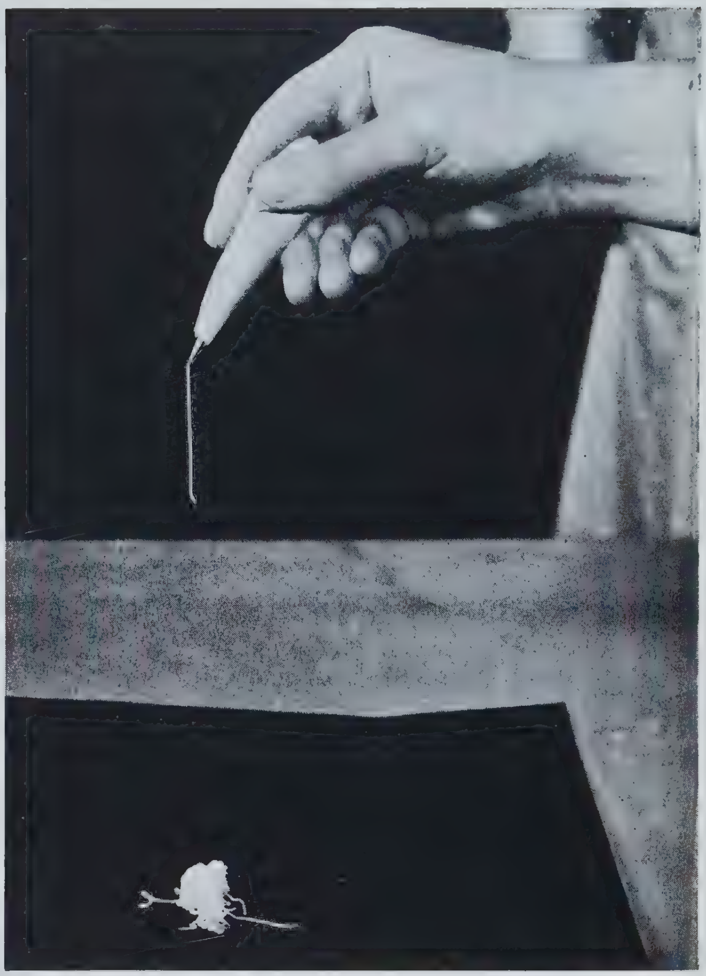


Fig. 7.5 *The pressure has been released, note finger and thumb position.*

PRESSURE

So our first lesson is on pressure. The amount of pressure decides the speed at which the sugar is piped; therefore it is most advisable to press gently until the sugar pipes at a speed you feel you would be able to control. This action will become natural during the elementary period.

Next we begin to pipe the first line upon the previously drawn white pencil line. This will give a better idea of how the sugar progresses from the tube in order to achieve its straightness. Place the point of the tube on the paper at the top of the line and begin to press gently. As the sugar leaves the piping tube, gradually lift the bag so that the sugar suspends, but not too high; this suspension must be maintained during the guidance along the white line. When sufficient sugar remains suspended the pressure is then released and the piping guided along the line to the end, the tube again resting at the end of this line, from which it is now taken away. The result should be a perfectly straight line without any extra thickness or blemish at either end.

With the first line it is important to practise the commencement and the finish and this could be divided into three sections: (1) press and lift; (2) guide where required; (3) stop pressure and lower the tube. Therefore, in all line piping, pressure is the basic principle. Whether a short line or a long line, the same procedure is required; with a longer line slightly more lift is needed and this will also help in guiding the line into position. Steady, constant pressure is the ideal in all line work, and this cannot be stressed too much.

Pressure gives the feel of the sugar and to gain confidence just keep pressing the sugar out, allowing it to fall into a heap. Then try to press and stop; you will soon become acquainted with the feel.

PARALLEL LINES

Having now carried out this exercise, the next step is to pipe another line parallel to the one on the pencil line, on the right-hand side, keeping an even distance all along the line. Always steady and guide the line with the left hand and finish without leaving a point. The

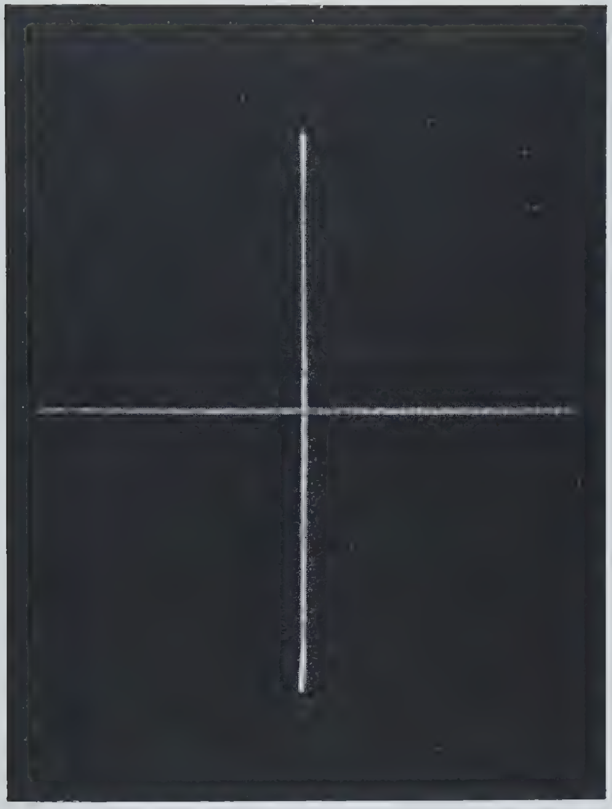


Fig. 7.6 *For guidance, pencilled lines.*

same procedure is then carried out on the left-hand side. Further practice may be had by continuing with lines on either side, but it is the press-lift-stop action that matters. This exercise is thus extended to a parallel line drawing with white pencil on the dark paper.

Horizontal Lines

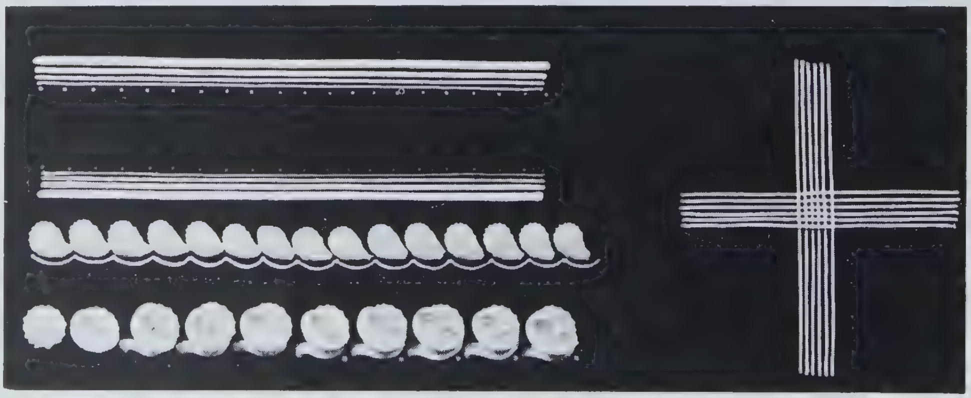
Follow the same action for a horizontal line, but you will find this a little more difficult for when piping a perpendicular line the line comes towards you, while the horizontal line tends to go away and needs a little more control. When this is achieved pipe a line above and below, keeping an equal distance along the lines.

All this work should be carried out with a No. 2 tube, and although this is a medium thickness it does give a better idea of the feel of the sugar during piping. Once this has been firmly fixed in the mind we can look to a similar exercise with a No. 1 tube. A No. 0 should then be tried. Remember the very small aperture; use less sugar in the bag for you will need greater pressure to get less from the tube. A slightly softer sugar mix is perhaps advisable and will then become easier to guide.

By now sufficient guidance has been given to enable the use of the bag to be taken a stage further, and for this we shall now keep to a No. 1 tube for the time being. With the smaller tubes first, make sure you have a well-cut tube. You can tell if you allow the sugar to be pressed out – the line will fall straight and continuous. But if the sugar begins to curl on leaving the tube it will be very difficult to pipe a straight line. A well-cut tube is the ideal for our purpose.

Making Squares and Curves

The second exercise will again be line piping but in the form of a pattern. We now place a piece of dark paper on a cake board upon the turntable and the two lines are now pencilled in for guidance. The perpendicular one is now 4 ins. long and the horizontal line passes at right angles through the centre. With a No. 1 tube pipe the perpendicular line in first, turn the turntable so that the horizontal line is in the perpendicular and again pipe along the line, but this crosses the previous one in the centre. Now turn the table clockwise to pipe the next line and continue to do this until the whole square is complete. This forms very small squares, each of the lines interlocking, and provides a very good exercise – tedious yet rewarding, and all the time greater confidence is gained.



Figs. 7.7 & 7.8 *Graduated lines, top and base of cake.*

Figs. 7.9 & 7.10 *Shell, or small star borders. Progress and finish, semi-circular.*

Fig. 7.11 *Interlocking squares.*

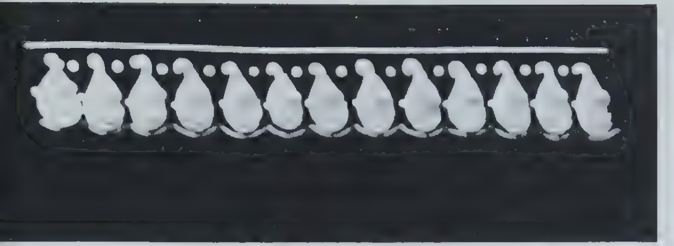


Fig. 7.12 *Variation for base border.*

We next bring in all the four plain tubes to pipe a series of graduated lines. First pipe a horizontal line with a No. 4 tube – here again you will get to know more about pressure. Continue by piping a line directly above it with a No. 3 tube; this should be as close as possible without touching. Follow with a No. 2 tube immediately above and then a No. 1, in that order. Nothing looks better than a good clean line in sugar work.

To take this a stage further the lines can now be built up by piping No. 3 on 4, No. 2 on 3, and No. 1 on 2, and again overpiped, No. 2 on 3, No. 1 on 2. Remember the space between the lines should be identical all the way along.

The following exercise is again with a No. 1 plain tube and a series of curves drawn between two lines ½ in. in width, with the outline of a penny giving six curves. Pipe either on the lines or use them as a guide to pipe directly beneath. Again this line can be followed with a No. 0 tube if desired, but this work along with a further two designs will tend to give greater dexterity to your piping, and as far as line work goes sufficient will have been learned and only continual practice will perfect.

Piping bulbs or dots

A very excellent exercise still concerned with pressure is the piping of a series of bulbs or dots. Their use is very wide, as they may be utilized to make a complete border, to form part of a design, or in miniature as a final finish to line work. The piping of bulbs needs some experience, but when perfected they look neat and if used in the correct place, give tone to the piping.

To start with, the beaten sugar should have stood awhile (preferably overnight) for then the consistency will need to be only slightly softer. Always reduce the sugar with added whites; the amount must be left to your discretion, depending on the size of bulb required. Several trials will have to be made, but if the icing is

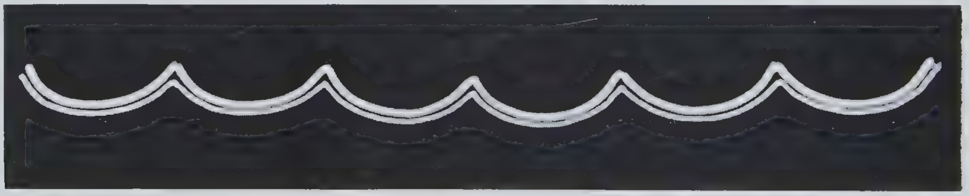


Fig. 7.13 *Six piped curves.*

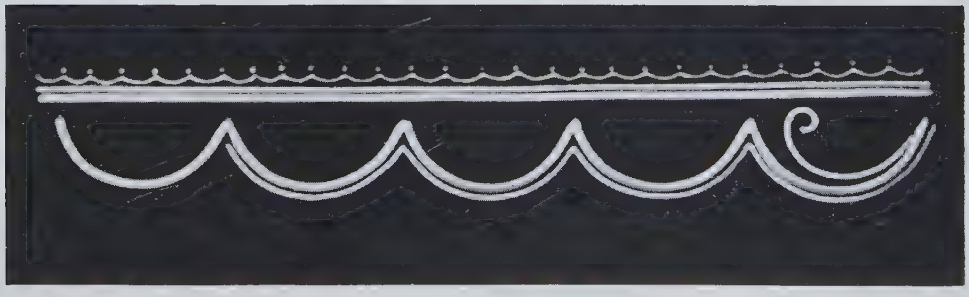


Fig. 7.14 *How to progress a curve stage by stage, build-up with graduated lines.*

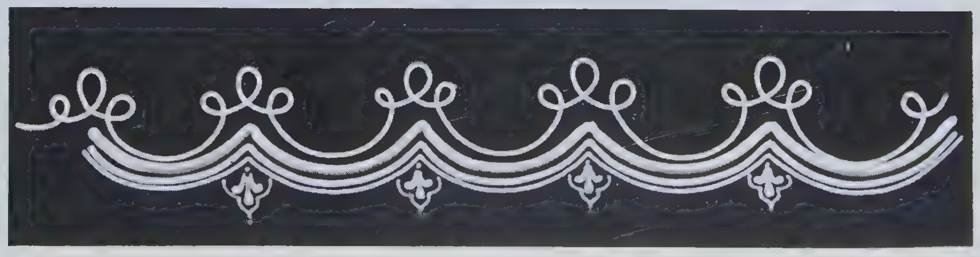
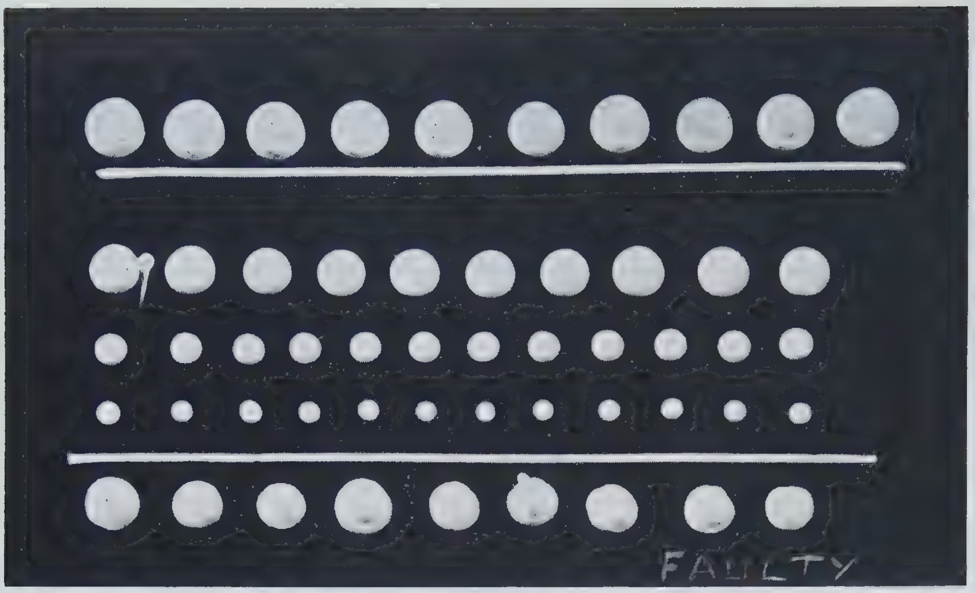


Fig. 7.15 *Advanced curves overpiping and continuous line design.*



Figs. 7.16 & 7.17 *Graduation in dots.*

Fig. 7.18 *Faults in piping.*

stirred and the markings left are not firm or sharp, the consistency should be about right. A bulb should be bold, semi-circular in shape, and dry without a point. A No. 1 tube is placed in one of the larger-sized paper bags and three-quarters filled with icing. From the outset the bulb must be piped quite firmly. Press the sugar with the tube just above the paper; thus the pressure of the sugar against the paper will give the shape. While making the shape, gradually lift the tube although still embedded in the sugar; then stop pressing and take away the tube, level with the top of the bulb, breaking away to the right. A well-made bulb will form a nice circular shape and be perfectly round. In making the bulb the pressure of the right amount of sugar is most important, for any hesitation at this point will mean lack of confidence and a misshapen bulb.

Royal icing, if too stiff, is the cause of ridges in the piped bulbs, while too soft an icing results in sugar flowing, and the bulbs are too flat.

As the tube becomes smaller, so we must pipe nearer to the paper. Again it is pressure against the paper until we come to the very fine tubes – then they are rested at an angle against the paper.

Gradation in dots means a series of bulbs piped in decreasing sizes with the various tubes, or a series of smaller versions with any one tube.

Scroll work

Scrolls are perhaps the most popular form of commercial piping and if a scroll is done neatly and correctly it gives a quality unsurpassed to the design. Through the ages scrolls in one form or another have been the beginning of all good drawing in many trades, and this has now been followed in cake decoration.

For all scroll work the sugar needs to be well beaten, yet nice and light and sufficiently strong to build a foundation on which other lines may be piped without fear of toppling over. To begin with we first draw a

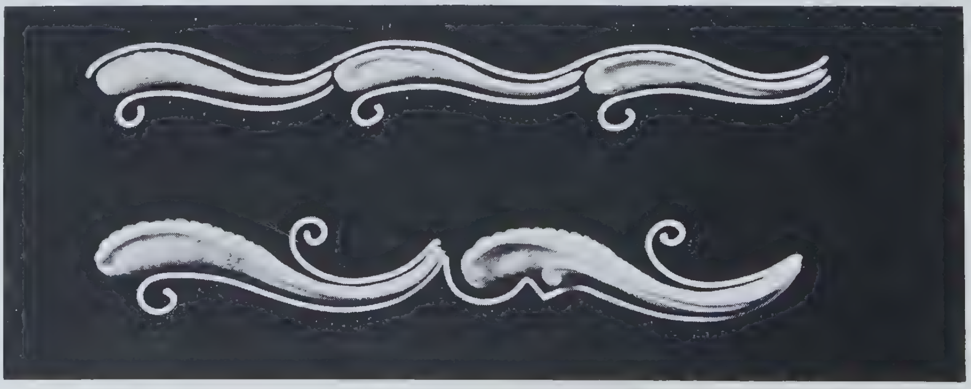
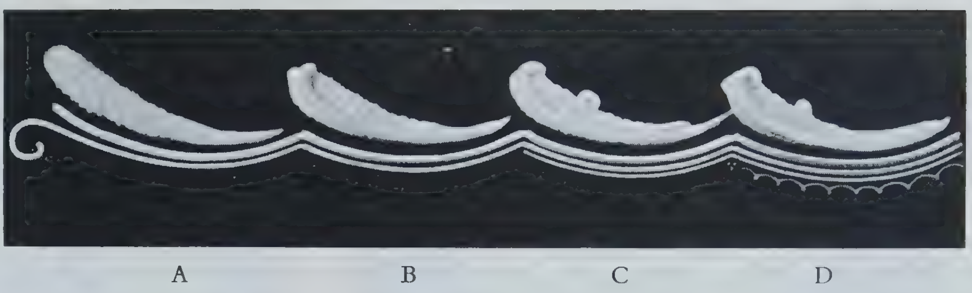


Fig. 7.19 *S Scroll progressive build up.*

Fig. 7.20 *Overpiping graduation.*

Fig. 7.21 *Graduation of a scroll:*

- A. *Formation*
- B. *Overpiped*
- C. *Elaboration*
- D. *Finished scroll*



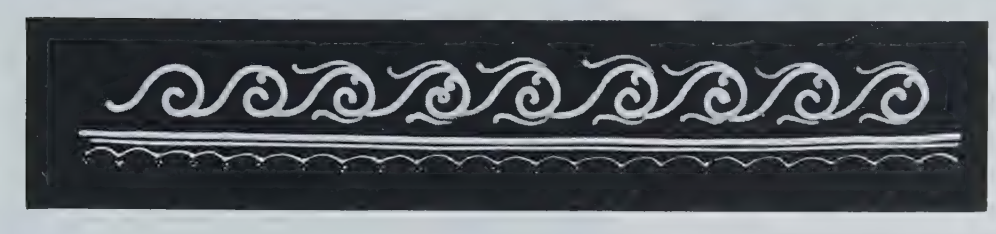


Fig. 7.22 *C Scroll. S Scroll border.*

line with a white pencil, and divide it into equal sections to make a fair representation of a cake edge. A small to medium star tube is now placed in a medium bag and filled with sugar. Before piping it is as well just to force some sugar through the tube, for quite often we find a small pocket of air at the start. When this has been eliminated, piping can begin. A scroll is usually thicker at the start and gradually tapers to the finish, and in each section the thicker part is above the line and as it crosses into the lower section so the line tapers away.

This form is commonly known as the *S scroll,* so you will see why half is above and half is below the line.

Be bold to start with and graduate gently to form a good curve. Greater emphasis is given if the scroll is piped with an up-and-down movement; i.e. the tube is lifted a little above the paper or cake top and taken down in repeated strokes along the line, each movement being piped against the previous one so that a series of fine ridges along the top of the scroll is seen. The idea is to keep these ridges even; then they may be overpiped. Any unevenness must be corrected and here again practice will make perfect. The same procedure is carried out in various sizes of star tubes. Remember, the larger the tube the larger the bag, so here we must use the largest of our three sizes, and, having a greater amount of sugar to press in larger quantities, we adopt a different method of piping, by holding the top of the bag in the palm of the hand which now provides the pressure instead of the fingers. Control is the important factor in forming a good, well-made scroll. Always be sure that a flowing line is made, for this in itself should give beauty and gracefulness.

METHOD OF OVERPIPING

Having completed and to some extent mastered this work we can now look into the method of overpiping with a plain tube. First take a medium sized scroll, allow a skin to form and partly set, and follow the line down the centre with a No. 3 tube, which after setting is followed with a No. 2 and finally a No. 1 tube. This will show the build-up. If a larger scroll is used then commence with a No. 4. Each of these lines should thus be graduated on the inner side of the scroll in the same way as lines were graduated, as shown; just follow the line of the scroll to make a good curve.

SIMPLE BORDERS

Several variations in overpiping are shown to give various effects, and each one being a pattern in itself will provide a repetitive border.

C scrolls are produced on the same principle. First draw the line and divide it into equal sections, but instead of starting on the line start $\frac{1}{2}$ in. above the point and pipe in the same manner, graduating the line to taper at the next point along the line. Repeat this same action keeping the same size, graduating throughout. Overpiping is again with a plain tube down the centre

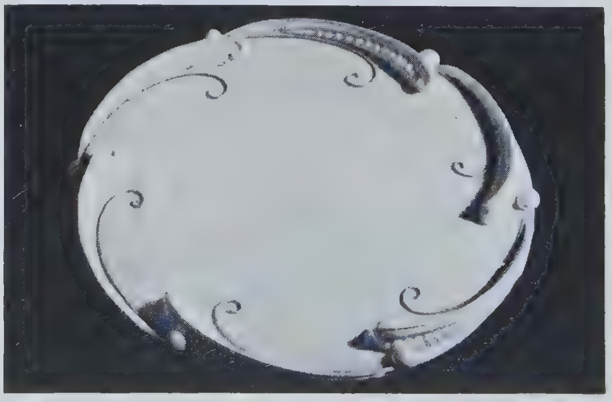


Fig. 7.23 *Completed cake as described.*

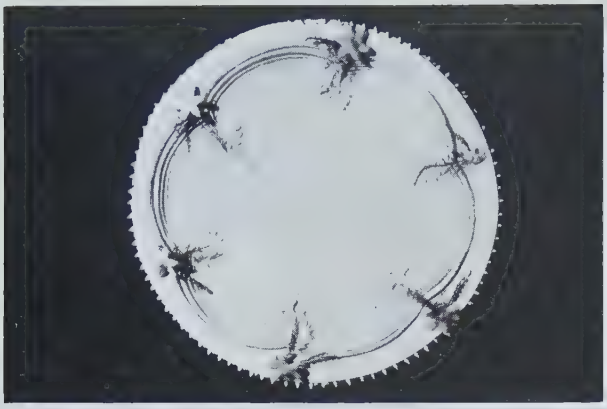


Fig. 7.24 *Student plaque.*

of the scroll, which is very often commenced with a curve – hence the term 'C scroll'.

So far a study has been made of lines, dots, and scrolls, and to see the full benefit of the work a complete pattern is designed to fit any cake – simple in form but easily elaborated for more advanced work. At this stage mention of the relative size of scroll to cake must be made. The larger the diameter of the cake the larger the scroll, but if smaller scrolls are used it will need more to complete the border, and where a smaller cake is needed the smaller scrolls should be piped. Experience will show the correct size and it will easily be seen whether the size is in proportion or not.

Two illustrations now show the make-up of a continuous scroll pattern with a small plain tube, and how by various additions a more complicated style is designed. All these additions follow, in some measure, the curves we have been studying.

In commercial practice a well-piped scroll could be complete in itself, and with the overpiping, although a gradation of lines has been explained, we could now minimize these for general work. With the larger scroll use a 4, 2, and 1 plain tube; for the medium use 3 and 1. When confident of your standard of work, efficiency and expediency should be the aim, but this must not be at the expense of neatness. Scrolls and curves provide a line of beauty and as we proceed through the various stages of ornamentation the natural curves of nature will be seen in a variety of ways.

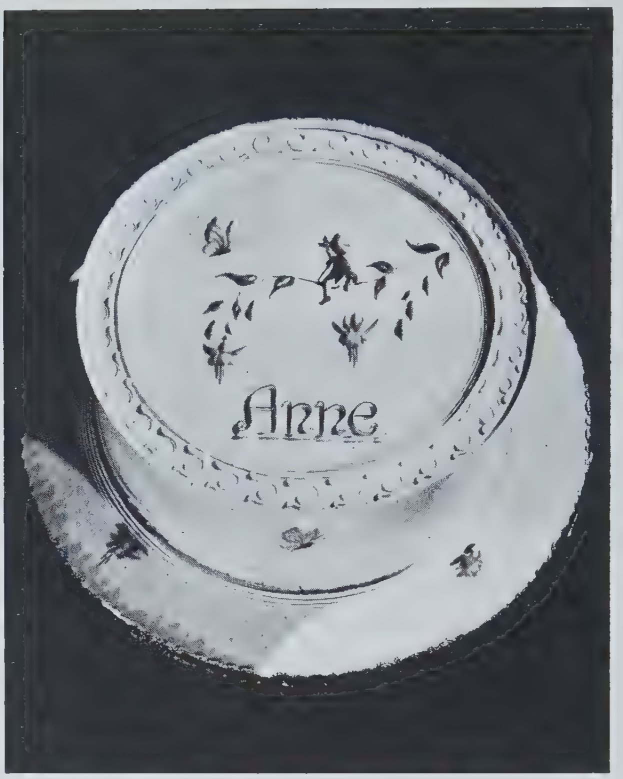


Fig. 7.25 *Completed cake incorporating S scroll border.*

8 Coating the Cake

Having prepared the cakes with almond icing we now arrive at the stage where the cake is to be coated with royal icing. This operation is very precise and from the beginning the same correctness must be applied to the coating as displayed in the early instructions on line work. Various methods of doing this exist and over the years the number of sugar coatings has been reduced and brought more into line with commercial practice. How many times to coat the cake must be determined in the light of the amount of time you are prepared to allow in relation to the price you will receive. In earlier years, sugar being the cheapest commodity (although this has not changed today), the general procedure was to use a larger proportion of sugar to other materials and so make the cake more profitable. This may be one reason why cakes at one time were so heavily decorated, to the extent of looking clumsy.

However, we have progressed a very long way and today we aim at a good clean appearance. To some extent this has been brought about by the many exhibitions that have taken place since the 1950s, and when all is said and done it is the prime object of an exhibition to improve the everyday work of the craftsman rather than the glory of winning cups and medals. The commercial type of exhibition cake is the standard of coating we aim at. We may not necessarily achieve this, but through these pages it will be shown that with a minimum amount of work our standard will be very representative. Without a good foundation it is not possible to construct or produce the first-class finish which is our ultimate objective.

Sugar consistency

The sugar for coating should not be too fluffy and if made by machine should be twenty-four hours old. Sufficient is taken from the main mix and stirred with a spatula, the object being to remove any surplus air cells. Sugar must not be too slack and it may need a little dry icing sugar added, but only sufficient to make the sugar just firm yet still in a spreadable condition.

Having the icing prepared, first see that the cake is placed in the centre of the board and that the board is in the centre of the turntable. To keep the cake in the correct position it is not uncommon to place weights on top of it, but if the cake is centred properly and the sugar of a nice pliable consistency this will not be necessary, and the heavier the cake, the better the fixture to the board. Another practice which is to be deplored is the method of fixing a cake to the board with sugar. This may be all right in helping to get a good coating, but do think of the person who has to cut the cake, only to see the bottom corner of the wedge broken away and held on the board.

Coating round cakes

The cake is now in the centre of the board. The icing is first spread with a palette knife round the side, turning the turntable clockwise with the left hand. The spreading means that the action of the knife is backwards and forwards, the idea being to take away any remaining air bubbles or lightness from the sugar. Continue the spreading until the whole of the cake side is covered. During this process aim to get a good even covering of sugar which should be taken above the almond paste top. Continue moving the turntable and to finish ease the pressure on the knife and bring if off towards you.

Next, cut off the sugar above the almond top by moving the knife edge away from the coated side to the centre of the cake. Each time the sugar is taken to the centre, remove the surplus sugar from the knife by scraping on the side of the sugar bowl. Always keep the knife clean.

Spreading the Top

Now prepare to place a quantity of sugar on the top of the cake and use the same spreading action as with the sides. Keep the turntable moving all the time; work

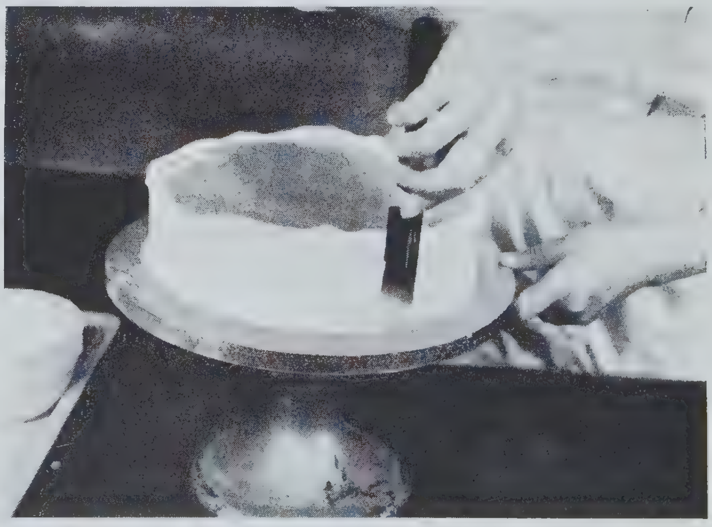


Fig. 8.1 *Spreading-action on the sides.*

from the centre of the cake to the edge and when wholly covered hold the knife horizontally at an angle of 45° to cover half the cake top – keep in this position while the turntable spins round. When a good smooth covering has been made, simply draw the knife towards you and then only the line made by the knife is left.

Now go round the side of the cake again, taking in all the overhanging sugar from the top either with a palette knife or, if you prefer, with a celluloid scraper. To produce a nice even covering the scraper or knife must be held in a perfectly rigid position, so that the surplus sugar is taken away as the turntable spins. Therefore it is a combination of the steady spinning movement of the turntable and the upright position of the knife taking away the surplus sugar which produces an even coat. When this is done a certain amount of icing will be above the top edge; just take this in with the flat edge of the knife moving to the centre of the top all the time. Then hold the knife steady once more and spin the table so that the sugar does not overlap the edge and the majority of the lines are taken away. Always draw the knife off the cake towards you.

This sounds a complicated operation but with practice you will find it fairly simple. However, some prefer to use a metal ruler to draw across the top in one sweep. This has its advantages but care must be taken, for too much pressure on the ends will tend to dome the sugar at the centre. When a larger cake is required the former method proves to be the better of the two.

Don't be afraid of spinning the turntable, for just as with the potter's wheel it is a combination of speed and pressure that gives the required shape.

Number of Applications

So far this is the end of the first coating of sugar and the cake is now set aside to dry. As long as the temperature is above the average, a skin will form on the sugar. The use of heat for drying merely speeds up the operation, but the tendency is for the sugar to set firmer and the icing is not so easy to cut.

When the first coating is dry the second will be applied in two parts: first the sides and then the top, allowing a drying period in between. Before commencing, make sure that any mark left on the first coat by the knife is sandpapered or shaved off, so that a perfectly even surface can be obtained. Any unevenness will be emphasized as other coats are applied. As before, spread the sugar to cover the side of the cake and spin the turntable with the knife in position. Continue until a nice even coating or clear surface is made and then take the knife away by drawing it towards you, still following the curve of the cake. This leaves a minimum amount of marking. Again cut off the sugar overlapping the top, using the edge of the knife to take the sugar into the

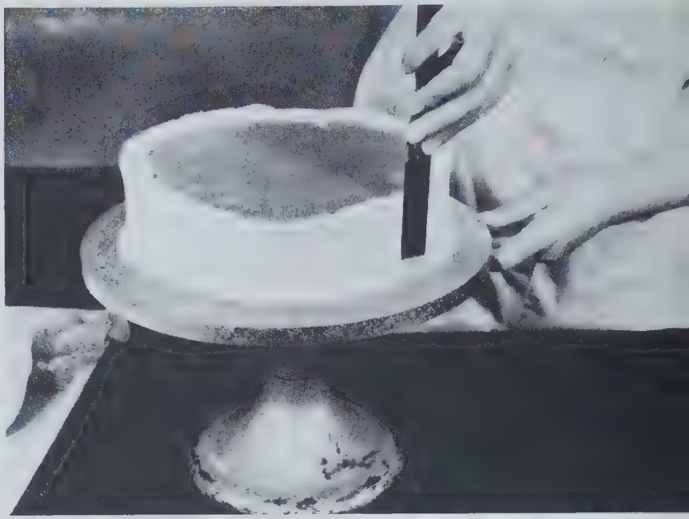


Fig. 8.2 *Ease pressure to finish coating.*

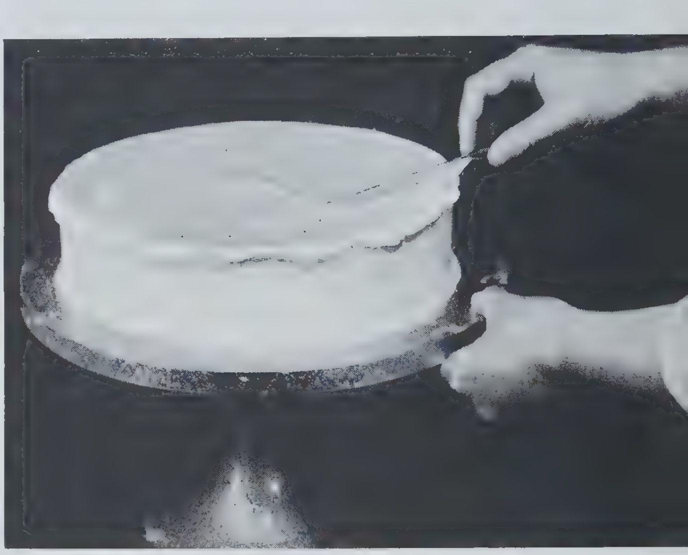


Fig. 8.3 *Angle of knife when coating the top.*

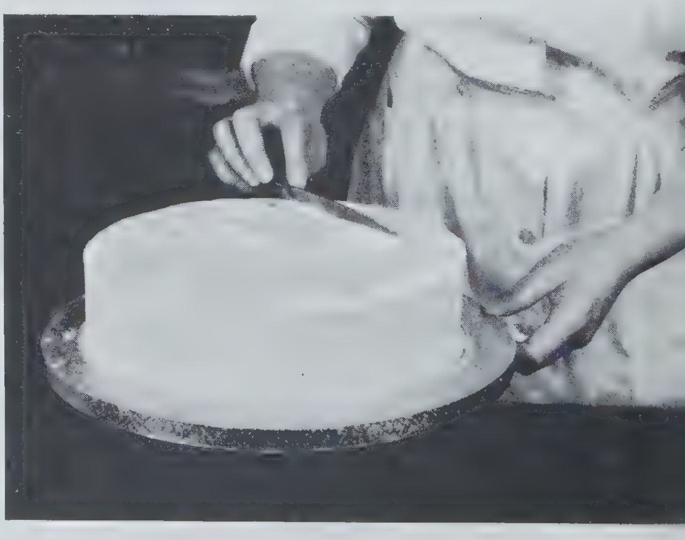


Fig. 8.4 *Take off top edge to the centre.*

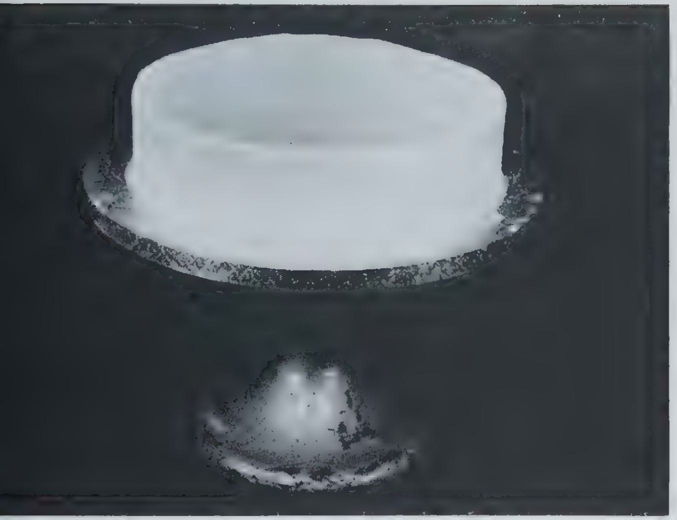


Fig. 8.5 *Completion of top icing.*

centre. The cake is then set aside to dry, after which the top is iced in the same way as before, except that this time the sugar overlapping the side is taken off with the knife edge in a vertical downward movement which cuts the sugar off level with the side. By this means a perfectly straight side or square corner is produced which is what we are aiming at.

Finally give a coat of sugar to the base board.

This is now the second coating completed, and after drying, both top and sides are lightly sandpapered to smooth out any marks or particles on the surface. It is essential to be sure you have the best possible surface now, for the next coating will be the final coat.

Final Coating

Icing for the third and final coating is prepared especially for the purpose. As always, use sugar mix that has stood overnight, never fresh sugar, and place sufficient in a bowl to cover the cake. Reduce the sugar with the addition of a little whites or water to a semi-runny consistency. A good tip here is to add a very small knob of soft fondant. This has the effect of holding the sugar while of a soft consistency. It does not just run off the cake but tends to drag: as a guide, the marks left in the sugar by the spatula should not quite disappear. How to arrive at the right consistency only experience and practice will determine, but try and you will soon get to know what is required. Remember that this is coating sugar; do not mix the surplus into the piping sugar.

To give the final coat pour sufficient icing on top of the cake to cover the whole and start spreading with a palette knife, keeping the turntable on the move until an even covering is given to the top and the sugar begins to run down the sides. Take away the knife and the mark left will disappear if the cake and board is gently tapped on the turntable, and the sugar will also be helped down the sides. Next, proceed to coat the sides in the same way as before but giving more pressure to the knife, for a very thin covering is required for the best results. Continue to spin the turntable and then take the knife away at the same curve of the cake. The surplus amount of sugar in the top edge is taken off by spinning the turntable and resting the knife on the top edge at an angle of 45°; the narrow edge taken away will allow for a scroll border to be piped.

Now cover the base board with the remaining sugar and place in a warm drying cupboard to set. This is a must, because the sugar in this soft consistency should be set quickly to prevent any further seepage down the side. If the sugar is too soft, the sides will become wrinkled and ridges will form. The top surface when dry should have a certain amount of shine as opposed to a matt surface, and you will find that there is a certain smoothness about the whole coating – a most desirable situation when piping commences.

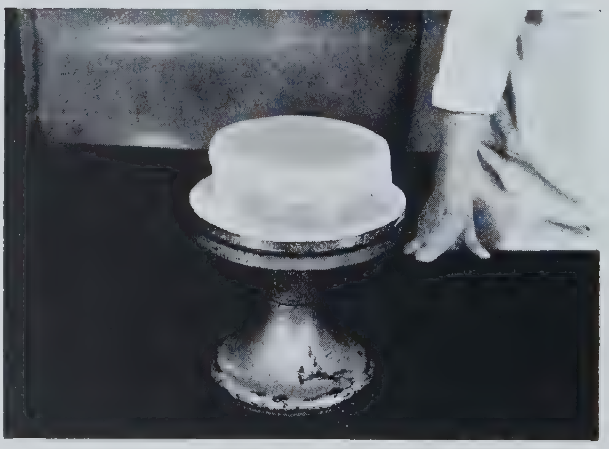


Fig. 8.6 *Final coating showing how sugar runs down the side.*

The better the foundation the better the finished cake will look, and to do this only a little extra effort is required.

Coating square cakes

The coating of a square wedding cake is carried out on the same principles. Commence by coating the whole of the cake and when dry coat each side or alternate side separately. The coating is best applied with a scraper and the movement along the side should be firm and decisive. The ends are squared by cutting the sugar off from top to bottom.

It is not advisable to return the cut-off sugar to the same container in case of any hard particles. Used sugar is disposed of in many other ways in the bakery.

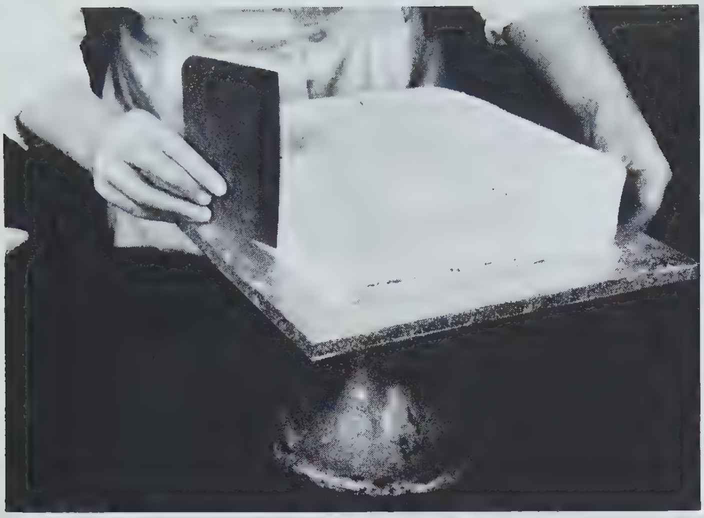


Fig. 8.7 *Coating of square wedding cake.*

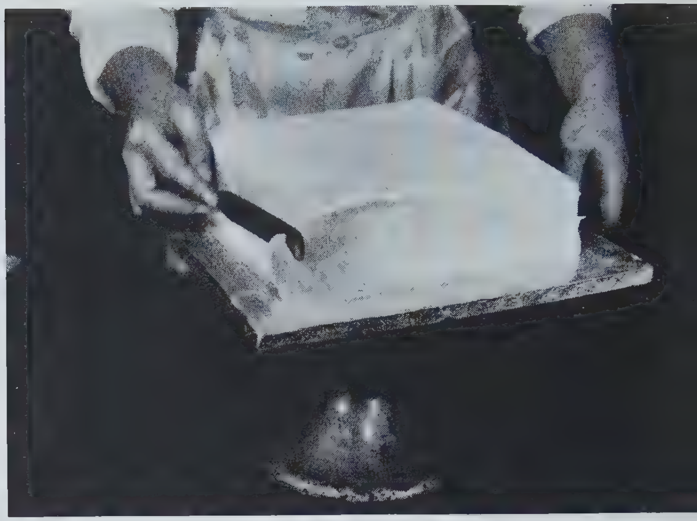


Fig. 8.8 *Square ends by cutting surplus sugar away.*

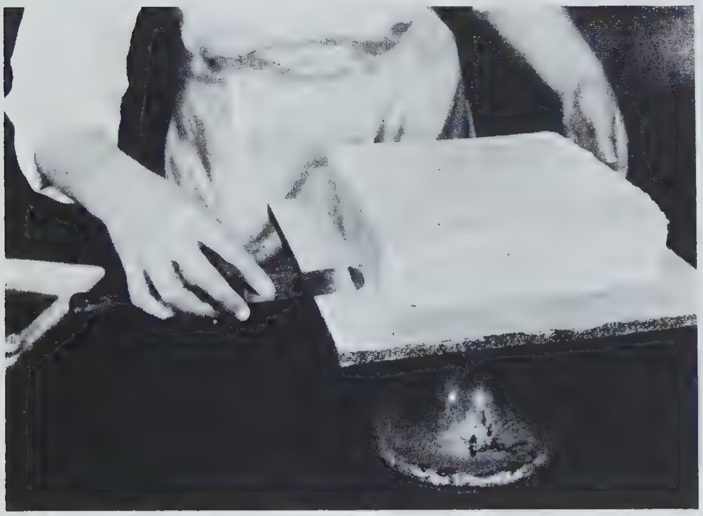


Fig. 8.9 *Coating the board, end of second coating.*

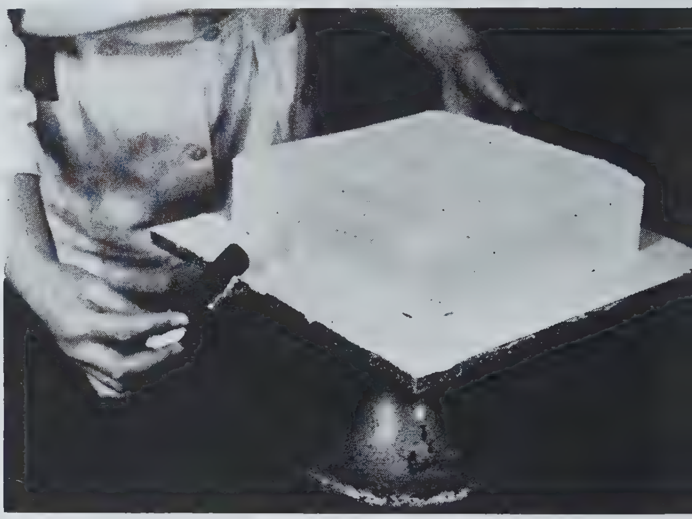


Fig. 8.10 *Take away surplus sugar from board edge.*

The same process is applied to *hexagonal cakes*. Once the cake has been coated and finely sandpapered, each alternate panel is iced as with the square cake. The most difficult part is keeping the panels the same size, and if the sugar is applied and cut off at either edge, this must dry before proceeding with the next panel.

Exhibition dummies

There is very little variety in the size or type of exhibit scheduled at the exhibitions held throughout the country. To summarize: a single-tier commercial wedding cake is generally presented on a board of not more than 11 ins., and a commercial birthday or christening cake on a board not more than 9 or 10 ins. Dummies are usually asked for and these are made by cutting two circles of wood, the sides of which are covered with cardboard or preferably lino to a depth of 3 or 4 ins., using the rough surface for the sugar to adhere to. A $\frac{1}{4}$ in. hole is made in the centre of the base board prior to securing it on to an ordinary drum cake board; thus the spike on the turntable will hold the dummy in position while being iced and also allow it to revolve at an angle.

METHOD OF COATING

The preparation of the sugar coating is much as explained previously, but the main idea is to secure a good basic first coat. Dry off and rub down well with medium sandpaper. The second coat is then applied and again rubbed down.

To arrive at that beautiful clean matt surface all that is necessary is to thin the sugar gradually for the following coatings: first the side, then the top, making sure of a good square edge. It is a question of putting the sugar on and scraping it off with a celluloid scraper. The surface air holes need to be continually filled with fresh sugar, and as the coating is applied more and more thinly, the correct surface is evolved, using a fine sandpaper after each coat has dried. This does not present too difficult an operation after some experience has been gained.

Points to Remember

Always have an eye to details and work as cleanly as possible. Sugar on the handle of a knife or the lower portion of the blade finds its way just where it is not wanted, so try to keep the sugar for coating on the end of the knife and greater control will be maintained. At each stage of the icing remember just to wipe the edge of the board with a damp cloth. Don't let sugar set so that it has to be scraped off. During icing see that the sugar bowl is kept covered with a damp cloth or greaseproof paper, to prevent any sugar setting on the side of the bowl. Just a few points to remember, and these are not uncommon faults. The more attention given to details such as these, the better the result and work; more pleasure is gained in doing it and a greater sense of achievement is attained.

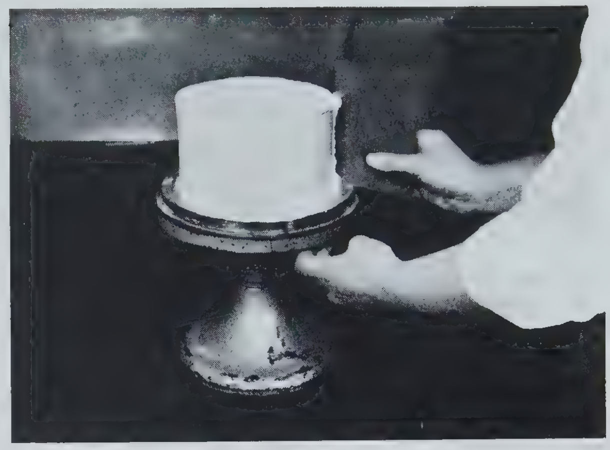


Fig. 8.11 *Coating Exhibition dummy.*

9 Drawing and Designing

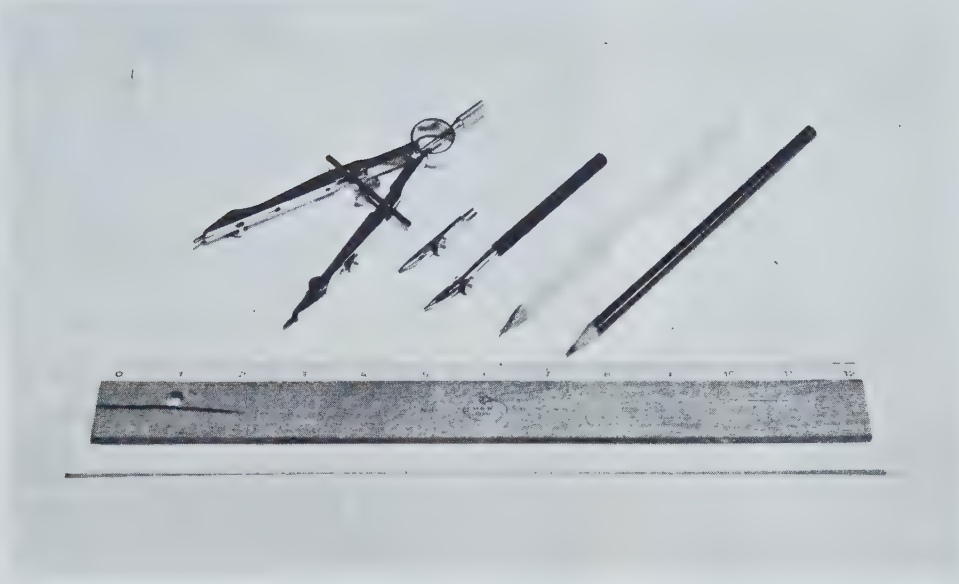


Fig. 9.1 *Drawing equipment.*

THE ART of drawing and design is studied more closely as a technical aid to sugar work in the school curriculum today. The more advanced the work, the greater degree of accuracy will be needed, and to attain such a degree it is desirable to have some knowledge of geometric principles.

Variations in border decorations are made by a simple method of piping thin outlines and filling the patterns with a soft sugar; these are commonly known as run-out sugar borders. A run-out sugar design can be a complete form, or made in sections and pieced together. This very advanced work has come to the fore in latter years through the great advancement of piping techniques in the exhibition field. To acquire such a standard, artistry must be developed, and accuracy or greater precision will become of even more fundamental importance in every respect.

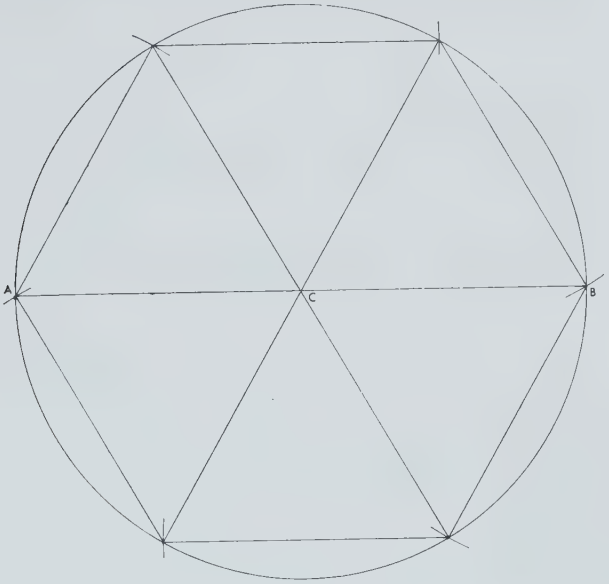


Fig. 9.2 *Division of the circle, using T square.*

TOOLS

For the beginner the following aids will be necessary to make his first attempts at designing: first a drawing board to which can be pinned a suitable piece of drawing paper; a ruler; pair of compasses; T square; set square; and pencils, one medium and one hard.

Division of circles

Generally a round cake is the most suitable shape to begin drawing. For instance, we are preparing to complete an iced cake and supposing the measurement across the top to be 7 ins., we draw a horizontal line AB with pencil and ruler and the centre point is marked C. The line AB is to be the width of a circle and will be known as the diameter. From the centre point C, to B, or half the diameter, is the radius, and the compass must now be set to this measurement: $3\frac{1}{2}$ ins. The compass point and pencil point should first be levelled. Now place the compass point at point C and describe a circle.

Cutting Templates

If the radius of the circle is divided into the perimeter or circumference it should measure into six equal divisions. Next draw lines to join the divisions through the centre point and the circle will then be divided into six. Again join the points of division along the circumference and a six-sided template could be cut out. These templates are ideal for supplying the correct division to a cake top where the piping is to be done on the cake.

Look at the circle for the second design. Instead of dividing the circumference, place the compass point along the line at point B, having the pencil beyond point C, and describe an arc outside the circle above and below. Now with the same radius transfer the compass point to A and describe an arc above and below. Where these two lines intersect, if a line be joined through the centre point it will be seen that the circle is now divided into four equal sections.

To subdivide each section the same principle is involved. Remember that to draw an arc the compass must be set larger than the radius of each division. By first placing the point at A and then D, the point where the arc intersects joined to the centre point will give the division. Carry the same procedure through each section and join. The circle is now divided into eight parts. If this process is continued, sixteen or even thirty-two divisions are possible and this should be as many as we need as far as borders are concerned. An elementary basis has now been described to give the beginner an idea of how to establish the division of round cakes; for easier and quicker use templates are made with any number of divisions, so that by placing your template on the top of the cake, all you need to do is to pipe a dot at each corner.

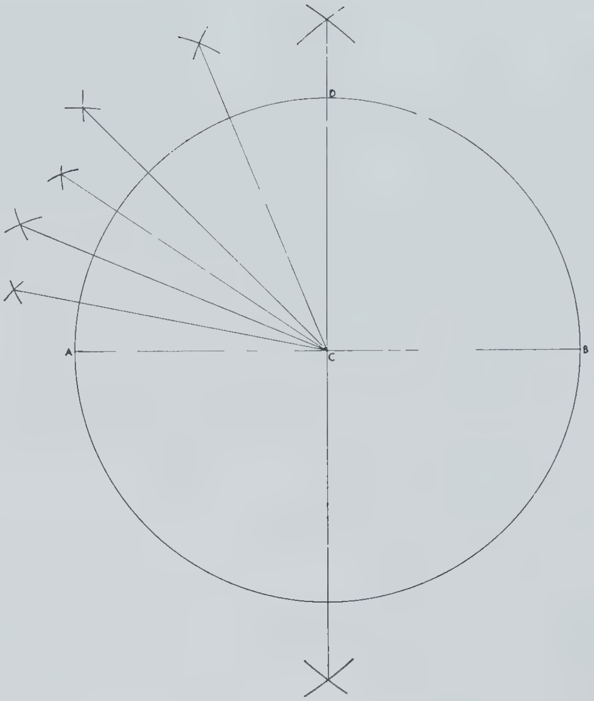


Fig. 9.3 *Variations to give the correct division.*

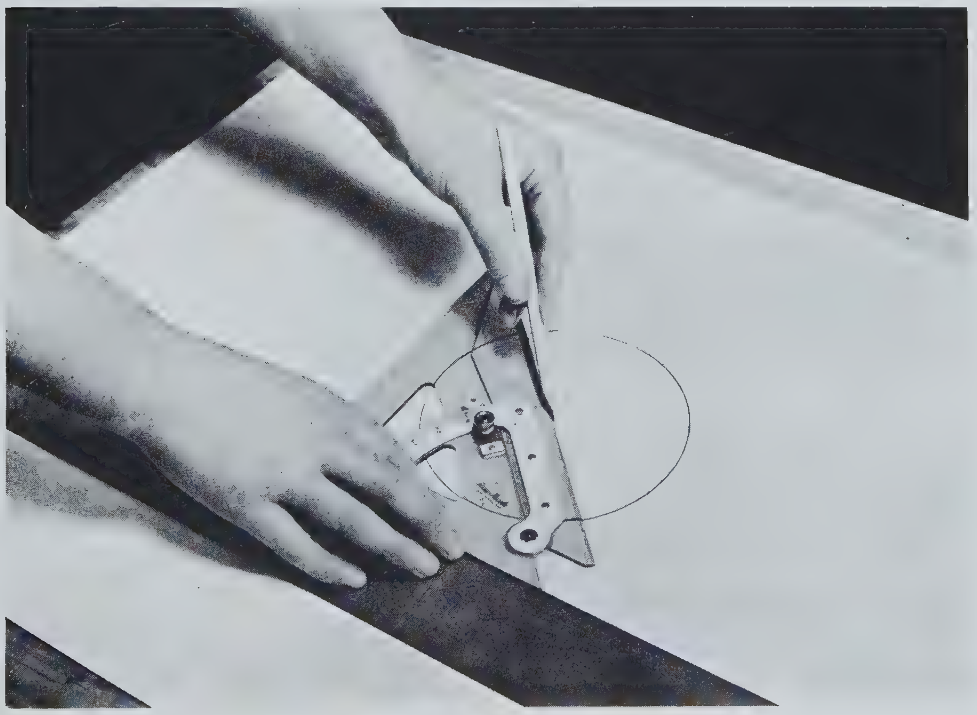


Fig. 9.4 *Division of a circle by a set square.*

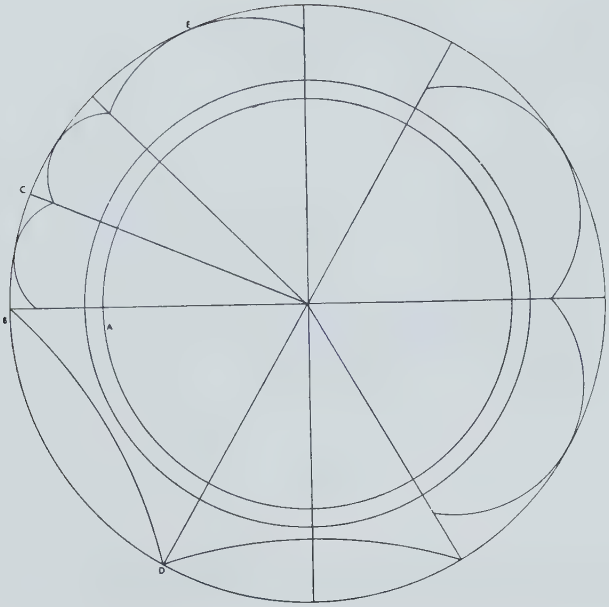


Fig. 9.5 *Drawing of a run-out from a circle (7in.). Points of division A, B, C, D, E, F.*

More advanced designs

Such a method is now shown using modern drawing techniques. Again begin with a circle which can then be subdivided by angles. With a line perpendicular to the base line the angle on either side is 90°; this same principle is now applied to the division of the circle. The circumference is equal to 360°, therefore any number of divisions is made by using the following formula:

$$\frac{360^\circ}{\text{No. of divisions}} = \text{angle required}$$

therefore

$$\begin{aligned} 6 \text{ divisions} &= \text{angles of } 60^\circ \\ 12 \text{ divisions} &= \text{angles of } 30^\circ \\ 8 \text{ divisions} &= \text{angles of } 45^\circ \\ 5 \text{ divisions} &= \text{angles of } 72^\circ \end{aligned}$$

The required number of divisions is drawn by means of an adjustable set square (Fig. 9.4) which is a combination of set square and protractor. To illustrate: first draw the circle and immediately below use a T square to give a parallel line to the centre line of the circle. By this method six divisions are required and so we need an angle of 60°. Having fixed the set square at 60°, rest on the T square so that the angle of the set square passes through the centre point of the circle, then draw in the line. Turn the set square to each side and draw the line through the circle so that the six divisions are drawn by the pre-set angles.

The use of a protractor is perhaps somewhat easier, for once the centre line has been drawn, the angle is first marked at 60° on either side of the vertical line in the top half of the circle. The protractor is then reversed to the lower half and the degree of angle marked in. Join the points through the centre point and the correct division has been drawn. This same principle can be applied to whatever number of divisions are required and may prove easier and quicker than bisecting as before.

These are some of the more important principles to be studied in the division of a circle. The same principles are used with either round, square, or rectangular shapes, and it is now the intention to apply them as a medium in the preparation of cake borders.

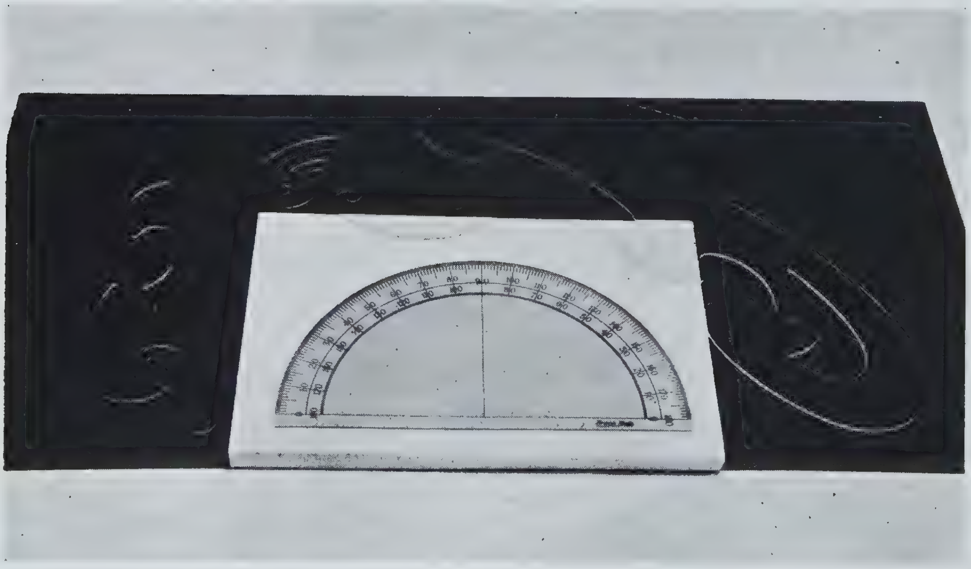


Fig. 9.6 *Drawing aids.*

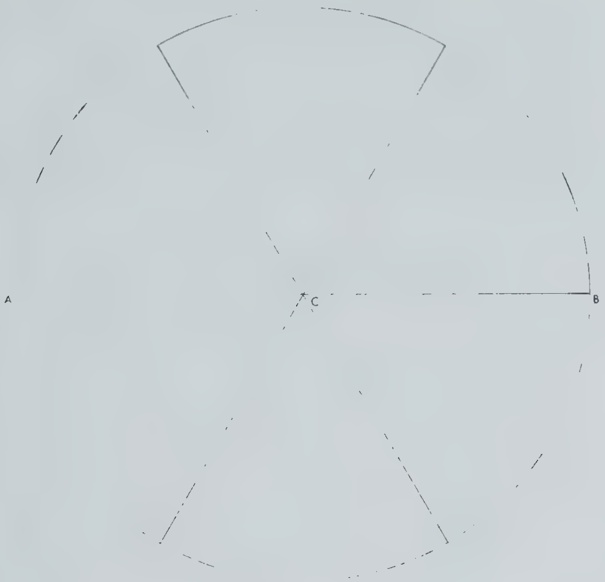


Fig. 9.7 *Division of circle into six.*

Cake borders

The 7 in. circle now represents the outer perimeter of the cake and in order that the sugar border can be affixed to the cake a further circle is drawn $\frac{1}{4}$ in. inside the 7 in. one (this edge will allow sufficient room to fix when complete). The design is developed from an extension beyond the outer line which could begin as a simple curve and advance to the most intricate and delicate structure. The extension should not be taken as far as the base board, and should only overlap to a reasonable distance yet enough to obscure the top edge of the cake from view. Therefore if the 7 in. circle is extended to a 9 in. circle with the inner measurement at $6\frac{1}{2}$ ins. the completed ring will be $1\frac{1}{4}$ ins. in width. The outer edge could then be further developed, provided the design is in the form of small scallops and kept within the circular pattern. But if the design was to be in six or eight divisions then the curve should fit into a circle $1\frac{1}{2}$ ins. in width at the widest point and the narrow point be reduced to $\frac{3}{4}$ in.

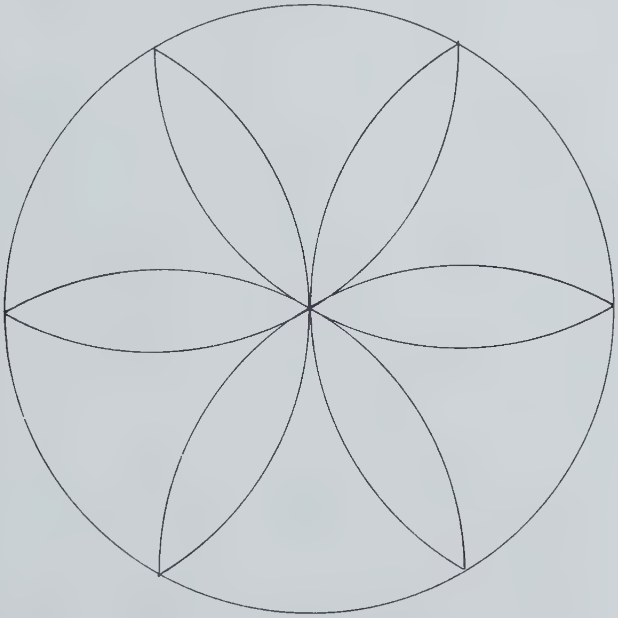


Fig. 9.8 *Using six points of circle.*

With a convex curve the measurement should be the opposite way round – the protruding six points at least $1\frac{1}{2}$ ins. from the edge of the cake with the $\frac{3}{4}$ in. from the cake for the inner edge of this curve. This is a very good guide, but your own personal ideas may determine your judgement. To attain the correct curve your compass should be placed on a central point in each division, and the compass extended so that the curve is drawn passing through the two outer points to give a concave curve. With the convex curve a circle must be described larger than the original so that the compass point is still in the centre line of the divisions and the compass is extended so that the convex curve is drawn to join the two points.

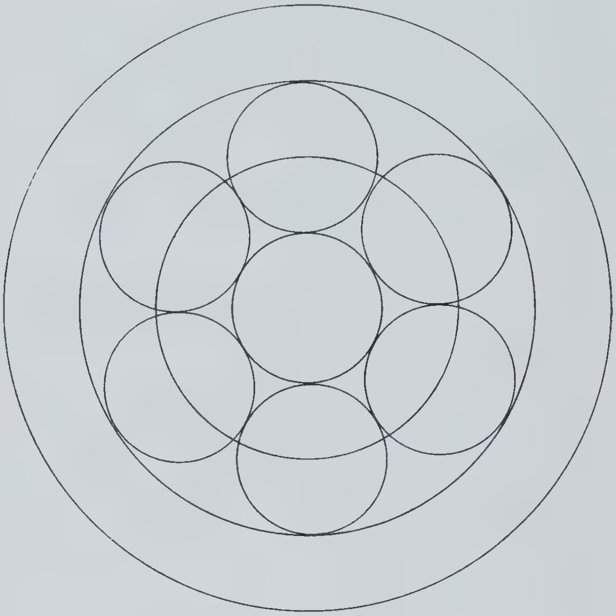


Fig. 9.9 *Another pattern using the six points.*

Divisions have so far been kept to even numbers, as they give a cake a more balanced appearance than using odd numbers, which are seldom required.

PLASTIC CURVES

However, to help in this field you may purchase a set of transparent French curves made of plastic with

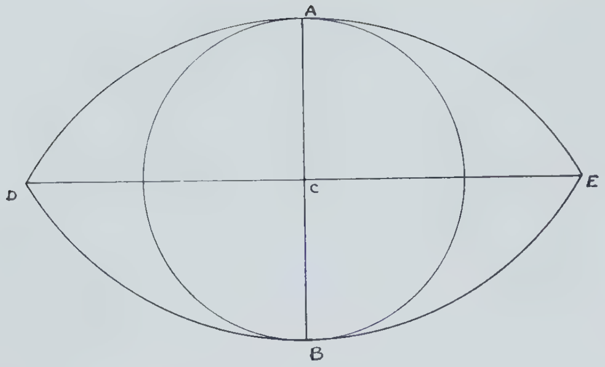


Fig. 9.10 *Drawing an oval.*

the correct curve drawn in. A mark is placed on the plastic curve at the points to be joined; this operation can then be repeated around the six sections.

Another advantage in using plastic curves: a larger curve may be made in two parts by drawing one side and then reversing the plastic to complete the corresponding curve. Scroll-type curves and various lengths may be made in this way and it will undoubtedly save time in the preparation of designs; this interesting and novel way of designing can also give a good deal of pleasure.

The art of designing can be carried still a stage further, for, as explained earlier, it has been our intention to bring about some form of standardization where necessary. If a demand for standard size cakes is anticipated, then the type of design will conform to a set pattern, and where such patterns are required over and over again it will be to our advantage to produce the design in as permanent a form as possible. Considerable time has to be expended on the initial work, and to keep repeating the same procedure is unnecessary.

Patterns, in order to have permanency, are made by the use of special drawing instruments and are drawn on tracing paper and then white card, after which they should be carefully filed away ready for use when required.

Compass and ink

The compass is an instrument that should be adjusted before commencing; one section being arranged to hold either pen or pencil and the other having the needle point, should be set fractionally lower than the pen. When the needle point is affixed to the paper the pen point should just touch. (When changing to a pencil point this is the one to adjust; let the needle be a permanent fixture.) The lead should be of the same hardness as for general drawing and preferably with a chisel edge, for this gives a fine, clear line and does not require sharpening so frequently.

Drawing ink can be purchased in black or other colours, but as a definite outline is needed black is the first choice. The pen is filled by taking the ink filler and placing two drops of ink between the blades of the pen ensuring that no ink is left on the outside of the blades; always guard against overfilling. Ruling pens are used in the same way. By this method the following designs are to be reproduced.

In order to divide a circle into six parts take a 60° set square and a T square. First draw a horizontal line through the centre of the circle, cutting the circumference at both points. Then lower the T square below the bottom of the circle and using the set square draw two further lines through the centre of the circle extending them to cut the circumference at the four points. This has divided the circle into six parts. Two further patterns are now shown, again using the six points of the circle. This merely illustrates the variety of work that can be produced with a little ingenuity.

MORE SHAPES

At intervals different types of shapes are wanted – apparently more difficult to design. One such problem is an *ellipse* or an *oval*; although basically the same, the ellipse appears more elongated, but somewhere in between the two the exact shape required is to be found. The easiest way to arrive at an oval is by first drawing a line of the required width AB. An extended line at right angles is then drawn crossing the centre point C from which a circle is described, the diameter being the width of the oval. From point A (Fig. 9.10) draw an extended arc of radius AB, to join points, D, B and

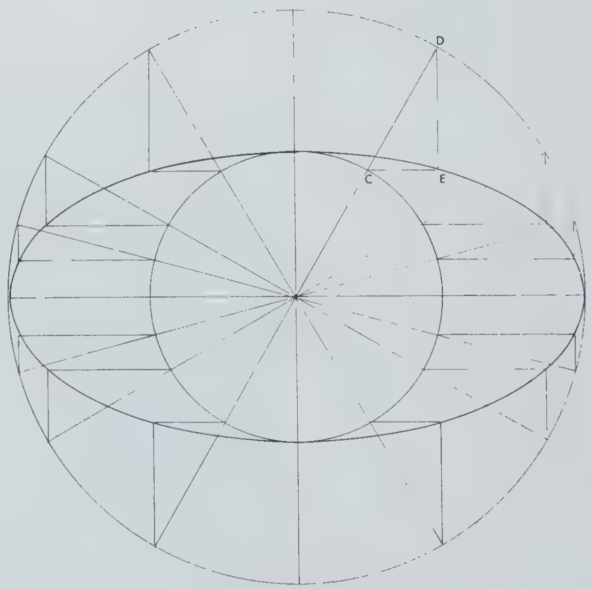


Fig. 9.11 *Drawing an ellipse.*

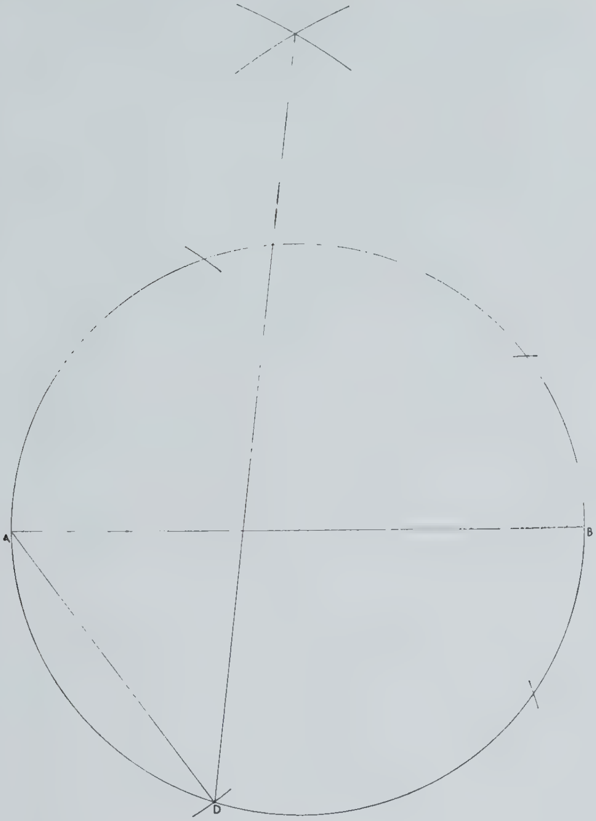


Fig. 9.12 *Construction of a pentagon.*

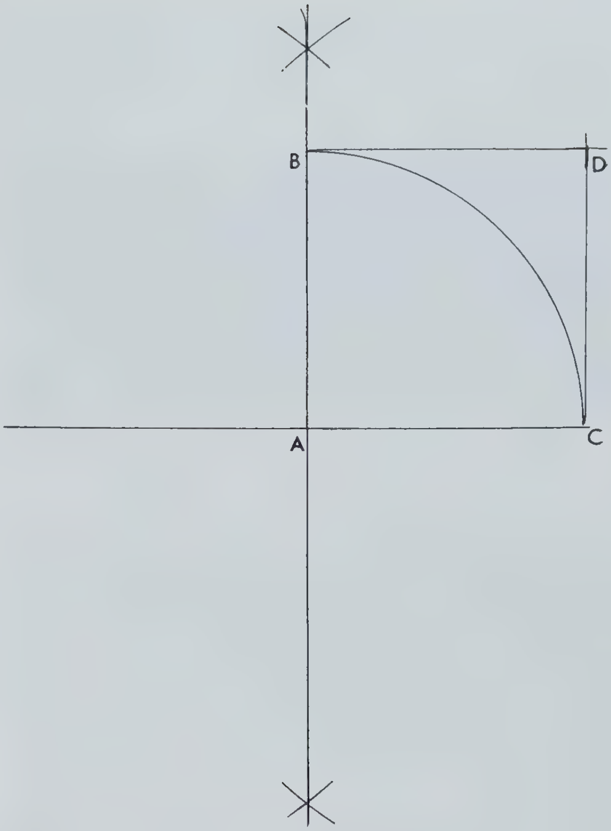


Fig. 9.13 *Drawing a square with right angles.*

E. From point B, using the same radius, join the points D, A and E to complete the oval.

A more advanced method is the use of two circles, one within the other, whose diameters are equal to the two arcs of the ellipse (Fig. 9.11). Divide each circle into 12 equal parts by drawing 30° and 60° lines. At point D where the line crosses the outer circle draw a line vertically downwards, and from point C where the same line cuts the smaller circle draw a line horizontally outwards to meet the vertical line drawn from D. The intersection E is the point through which the ellipse is drawn, to be continued at the various points in the diagram.

A great variety of ovals can be obtained by varying the diameters of the two circles.

To construct a *pentagon* the diameter A and B of a circle is divided into five equal parts. With a radius equal to the diameter draw two arcs from A and B until they intersect; at this point draw a line to pass through the second division point on the diameter and extend so that it cuts the circle at point D. The distance between A and D stepped along the circumference will give five divisions, or if a chord A and D is drawn this will give one side of the pentagon. By dividing the diameter into any number of divisions and describing the arcs from A and B, provided the joining line passes through the second division and is extended to cut the circle, the required distance AD will then divide into the circumference to give the number of divisions required.

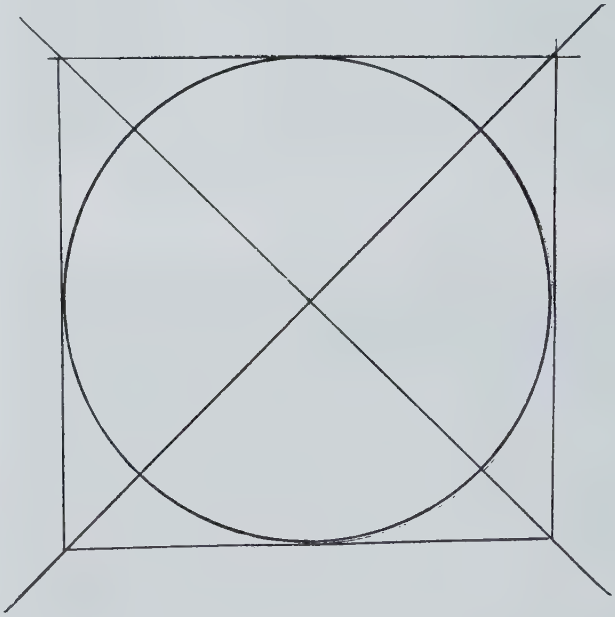


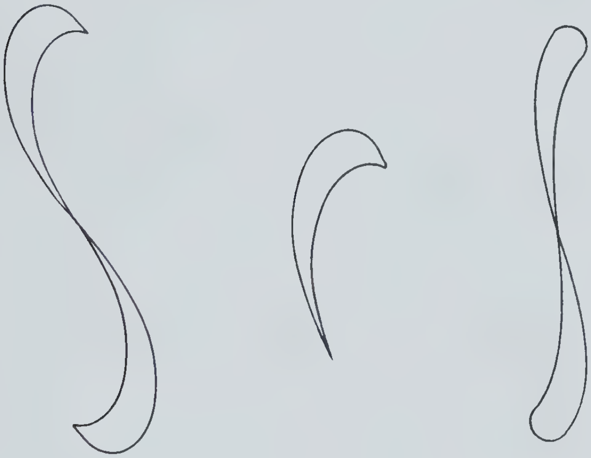
Fig. 9.14 *Drawing a square with arc.*

A *square* is generally made with a set square and T square, but can also be drawn with the compass. First draw two lines at right angles and at point A describe an arc the length of the side to give corners B and C. Now with B and C as centres with the same radius, draw two intersecting arcs to locate the corner D. A second method is to describe a circle the diameter of which is equal to the side of the square. Draw in two lines with T square and set square at right angles to each other and extend beyond the circle; now join the four sides, with the set square placed parallel to the centre line on the outer line of the circle.

With a little ingenuity the use of French curves becomes very interesting to experiment with. A variety of designs or motifs suitable for inclusion in general decorative work are successfully drawn in this manner. By beginning with a simple curve and extending it, you will see what a variety of patterns can be made; and if you proceed still further, the more complicated forms of a cornucopia and curved designs will emerge.

They can be very effective and distinctive in soft sugar work and other decorations, particularly with the addition of colour and flower arrangements.

Fig. 9.15 *Use of French curves.*



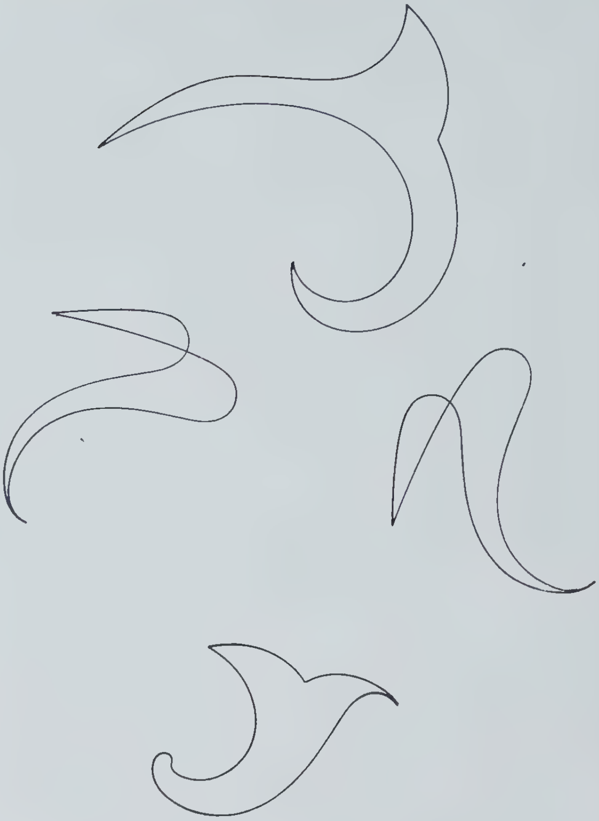


Fig. 9.17 *Various curve designs.*

Cut-out Stencils

Round, square, and elliptical shapes can also be quickly drawn using plastic cut-out stencils. These are obtainable at the various art centres and consist of a plastic type of ruler in which the shapes are cut out, diminishing in size. By placing the ruler on the drawing board the particular size shape is then drawn in. Providing your requirements come within the range this is a very quick way to draw and, as with the French curves, these stencils offer a fair amount of interest and experimentation in designing.

This introduction to more advanced drawing should be sufficient to give scope and enthusiasm for accuracy and perfection and the ability and initiative to design whatever may be requested.

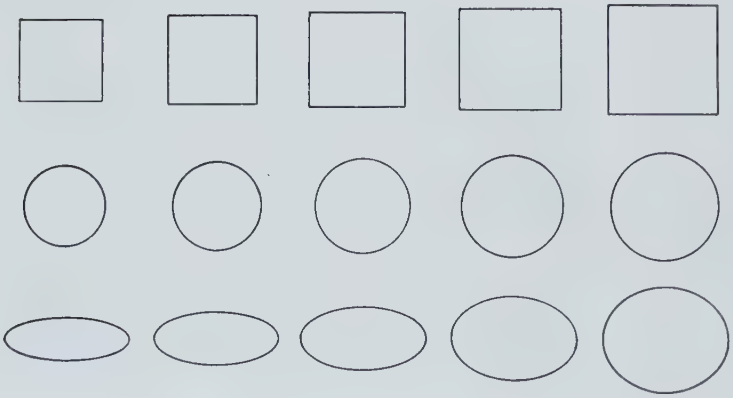


Fig. 9.16 *Stencils: squares, circles, elliptical.*

10 Decorating a Wedding Cake

Before attempting to start the decoration of a cake it is assumed that the coating has been well accomplished. The need to obtain as perfect a finished coating as possible will nevertheless provide a sound foundation on which to pipe the design. Each item is a complete stage in itself and at no juncture must the piping be used to cover faults in the coating. The more perfect the finish, the more we are likely to pipe consistently, thus obtaining greater uniformity and a more distinctive appearance when completed.

The main theme of decoration will proceed through the various stages of a one-tier, two-tier, or three-tier cake. Whatever design is used it will be necessary to divide the cake into either six or eight divisions and this procedure should be carried out whatever number of tiers are required, to give the correct balance. Yet it is also possible to have a continuous border. The size of cake will also have some bearing on whether six or eight is the better number of divisions, and to some extent this must be left to each individual cake, although it is hoped that the illustrations will offer helpful guidance.

Cutting a wedge

In many instances it is advisable to cut a wedge in the base tier cake. This is a service greatly appreciated by the bride and groom as little effort is required of them

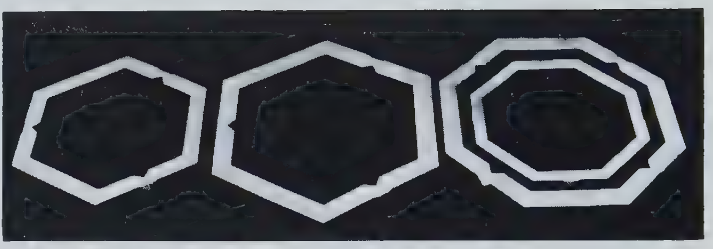


Fig. 10.2 *Various templates.*

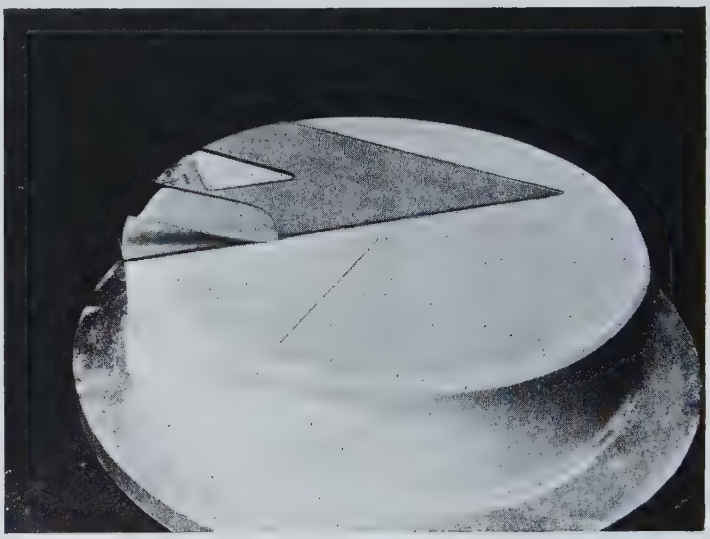


Fig. 10.3 *Use of set square for wedge score on top.*

Fig. 10.1 *Iced cake ready to cut wedge.*

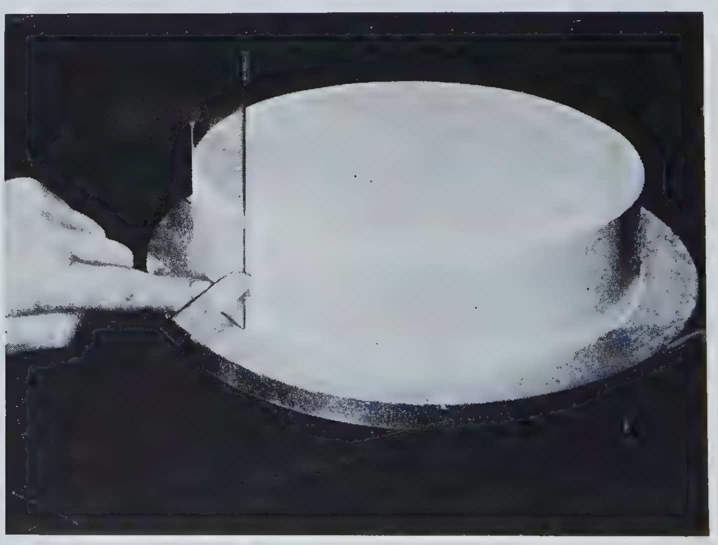


Fig. 10.4 *Scoring the side.*

and it also enables the photograph to be taken without showing the icing breaking away from the base. This is not a difficult exercise but it requires a good deal of care to be really successful. The cutting of the wedge is suitable to a cake with either six or eight divisions. The coating must be quite firm and, as explained in Chapter 9, you will have templates already cut, giving the required sections.

Use of Templates

First place the template on the top of the cake as central as possible and proceed to mark off the points with a tiny dot of sugar. Next mark in the centre point through the template with the compass point and then remove the template. With either a ruler or set square score a line from the centre point to one of the dots marked at the edge; then follow by the same division to the next dot from the centre and this will form a triangular shape. Next place the ruler in a perpendicular position against the dot, or mark where the top is marked, and score again with the knife. Repeat this on the other side of the wedge. It is along these lines that the icing is now cut through to the almond paste with a serrated knife or fine saw. Similarly the sides are now sawn through, but be sure to hold the knife in a perfectly upright position; the icing should be cut each time with a gentle sawing action so that its edge does not break away. Remember to brush away any sugar dusting before starting to cut.

To cut the cake, a fine bladed, sharp knife is required and the first stage is to cut through the almond paste as far as the cake, when the knife should be wiped on a damp cloth. Next cut through the sugar on the sides to make sure the knife will pass through easily. Now to cut the cake use a steady forward and backward movement with a little pressure, making sure the point of the knife passes beyond the centre of the cake at each cut so that on removal the centre has a perfectly straight edge.

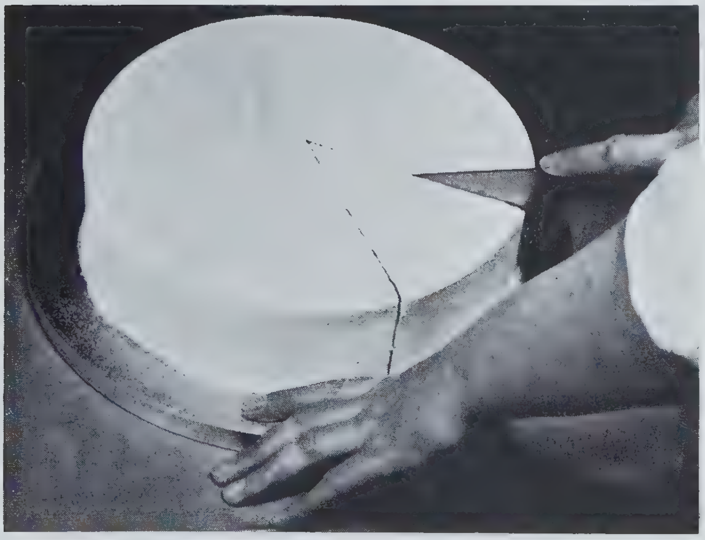


Fig. 10.5 *Cutting the wedge.*

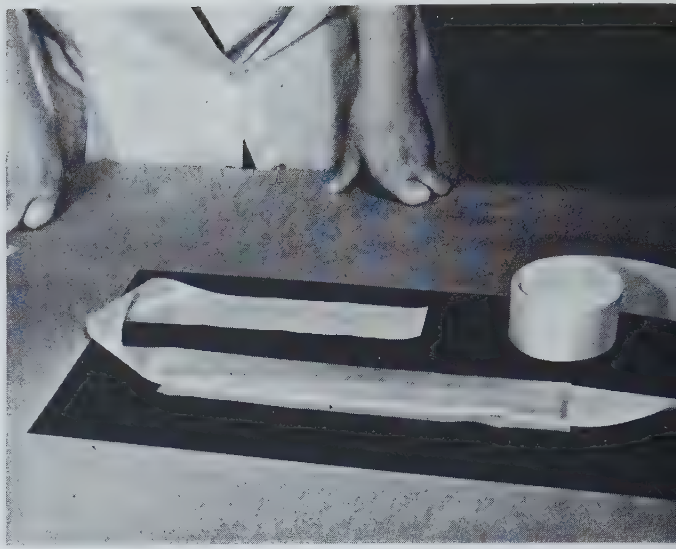


Fig. 10.6 *Ribbon in V-shaped greaseproof.*

Tying a Bow

If the board has been coated with sugar, cut through the sugar at the base before inserting a knife underneath to lift out the wedge. Having now cut the wedge this is tied with a bow of white satin ribbon 1½ or 2 ins. wide, but first the ribbon must be enclosed in a V form of greaseproof paper which is cut to the same size as the two sides of the wedge but rather wider than the ribbon. By placing the ribbon between the greaseproof paper any staining from the cake itself is avoided. The wedge is now returned to its former position in the cake, making sure of the correct fitting. The ribbon is tied in a neat bow, the stages of which are illustrated in Fig. 103.

Nothing looks better than a neatly tied bow, and as in some cases difficulty is at first experienced, the enlistment of the female touch will be an advantage.

Larger cakes sometimes require a longer length of ribbon to extend below the base stand. No doubt this adds that little extra finish, and some prefer to have a V shape cut in the end of the ribbon, but this is all a matter of personal taste and must be left to your own personal preference.

COLOURED CAKES

In some instances a coloured wedding cake is required; the ribbon and decoration should then be in a matching colour. This used to be a particular feature in society weddings where the colour of the cake was made

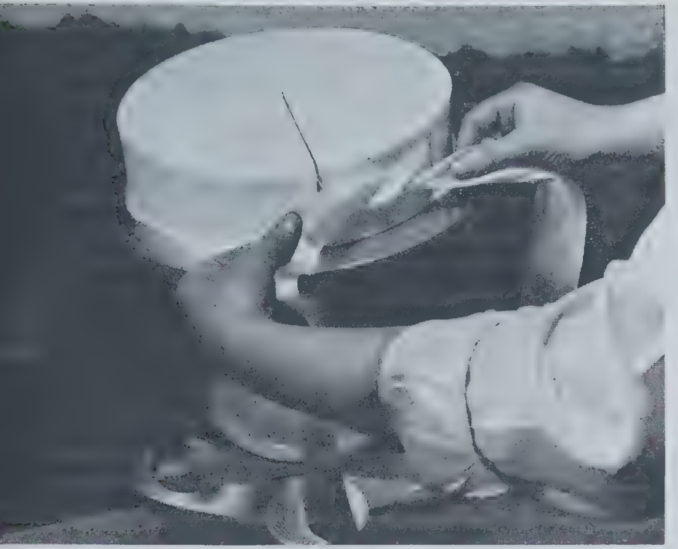


Fig. 10.7 *Stage 1. Ribbon right over left.*

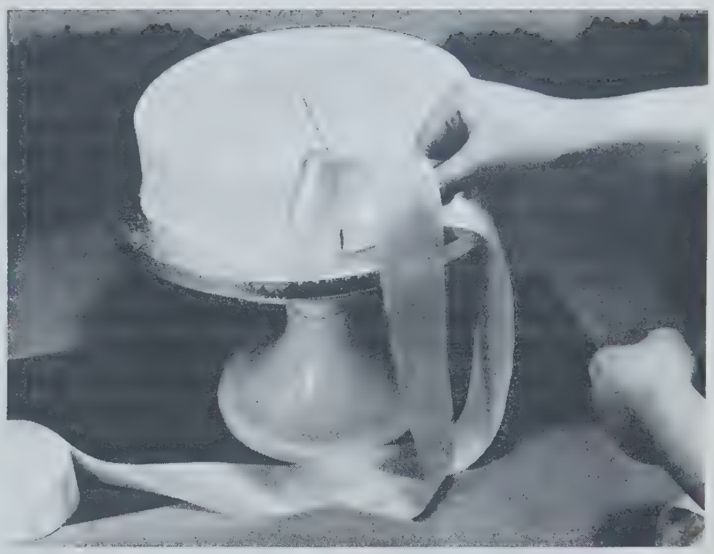


Fig. 10.8 *Stage 2. Fold underneath and pull tight.*

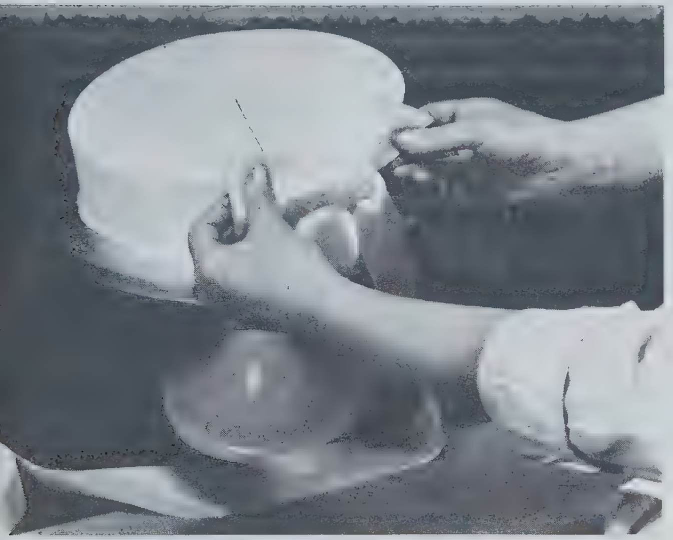


Fig. 10.9 *Stage 3. Ribbon tie bow.*

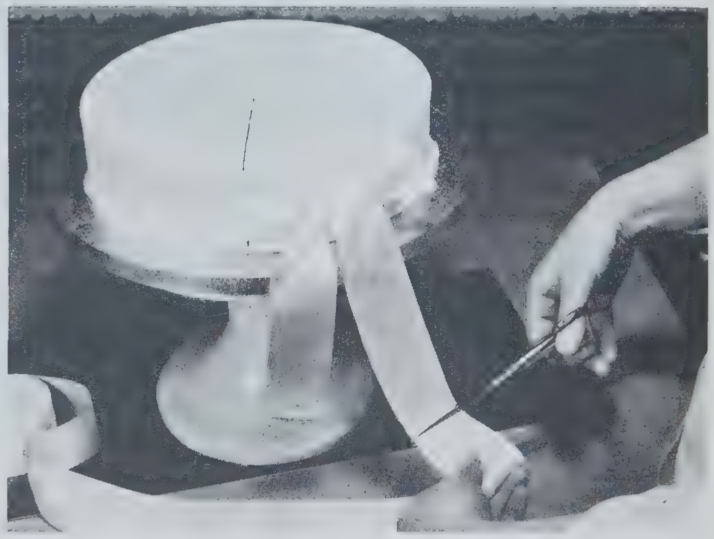


Fig. 10.10 *Stage 4. Bow tied, length of ribbon cut off.*

to match either the colour of the bride's dress or the general wedding décor, but today it is somewhat rare. Coloured cakes certainly lend themselves to a more advanced type of work, and the fact that these are not everyday occurrences tends to bring out the greater skill and initiative of the confectioner.

Decorating a three-tier cake

When decorating a three-tier wedding cake we must first give some thought to design, for this has to be decided and either drawn out or firmly fixed in the mind before we begin the piping. As explained previously, the tier will have six divisions, so that each division will contain an individual piece of work, yet all will combine to complete the design. All the scrolls can be incorporated in such a design and are well suited to this type of commercial decoration. You will observe as the design progresses to perhaps something a little more ambitious than at first intended, that at various stages it can quite easily be discontinued and still provide a commercial finish. First a sectional pattern is illustrated. We thus form a basis for decoration, one that can be enlarged on or even extended to obtain more delicacy and finesse. As shown in the illustrations, various methods are used and again one of these methods will emphasize the commercial angle. But before piping on to the cake the various ways will be demonstrated, showing their respective advantages.

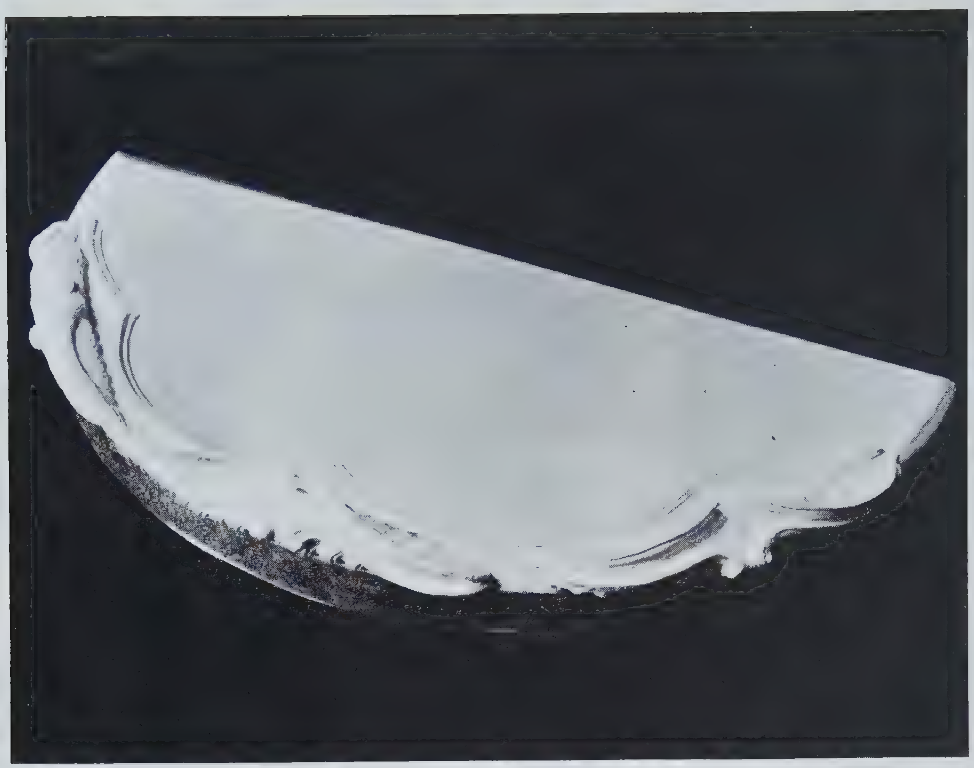


Fig. 10.11 *Various build-ups of border on prepared base.*

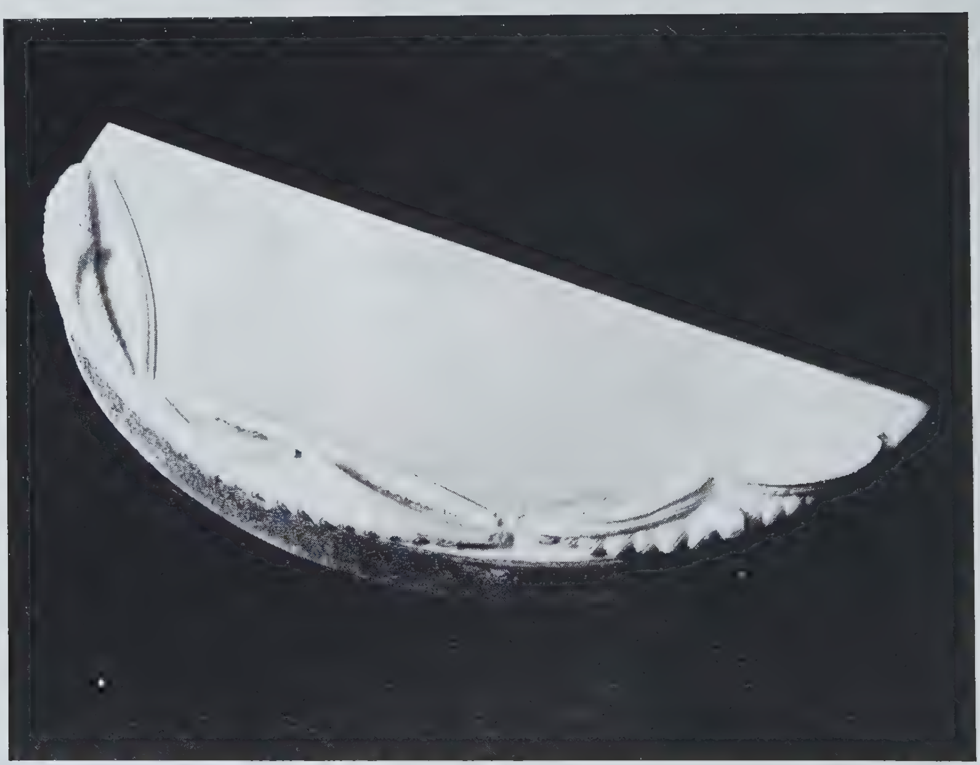


Fig. 10.12 *Scroll border. Built in two sections.*

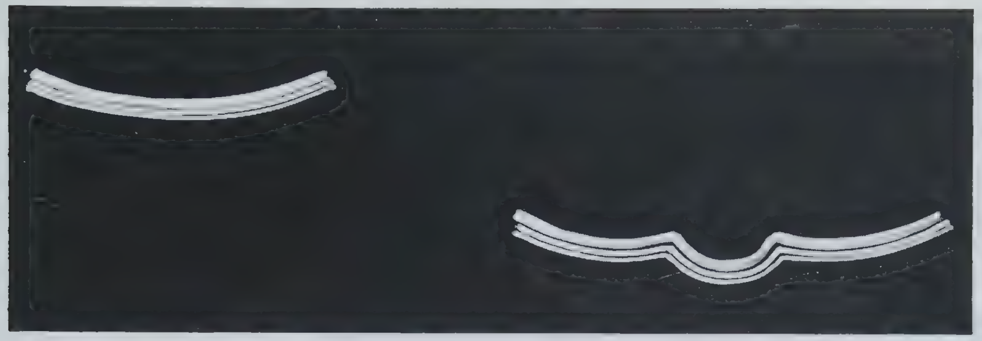


Fig. 10.13 *Top border underlined.*

Fig. 10.14 *Underlined sides.*

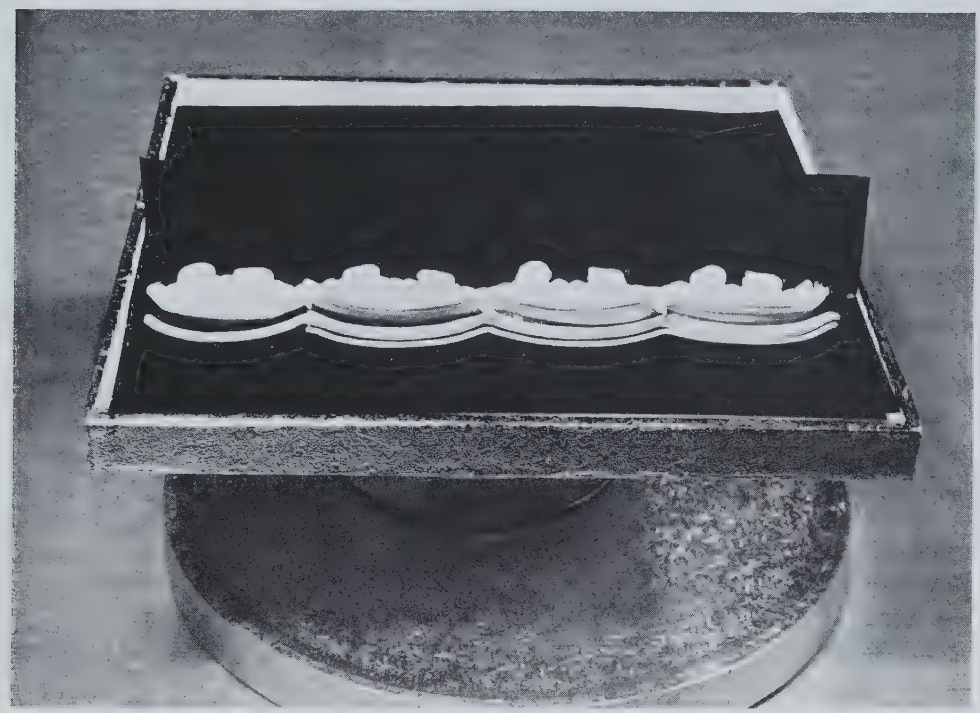


Fig. 10.15 *Base border.*

BORDER PIPINGS

First the section is divided into two portions and a bold scroll, graduated to the edge of the cake in opposite directions, is made with the star tube and then built up as shown.

Secondly, each scroll is piped much more boldly yet graduated in the same way and the whole of the piping built on the top.

Thirdly, an elongated gradation is piped in each section on which the scroll piping is then built. This shape, although quicker for producing a finish, requires considerable practice, for it is essential to pipe the shape as regularly and evenly as possible: unless this is done it will be impossible for the scroll piping to set evenly on top, and the more unevenness there is at the commencement the more pronounced it will be on completion. If piped correctly such a shape will form the basis of many designs and will give a boldness to the top border.

Similarly the outlines of the border both on top and side will alter according to which type of design is used. Where the C scroll has been followed by the S scroll it is advisable to break the underpiping into loops composed of a small one to outline the centre and a longer loop to follow the line of the scroll. Where the lines are graduated they should be as close as possible without touching, but always the same distance one from another to obtain the best effect. Where the overpiping has been formed on the elongated shape then the outline will form one long loop underneath and on top.

These are the main points although various finishes will be given, and it will be in your own interest to study and practise the different versions before applying one to the cake, because it is with this experience that you are able to judge the amount of time needed to produce the very best effect. Simplicity and neatness are always the operative words.

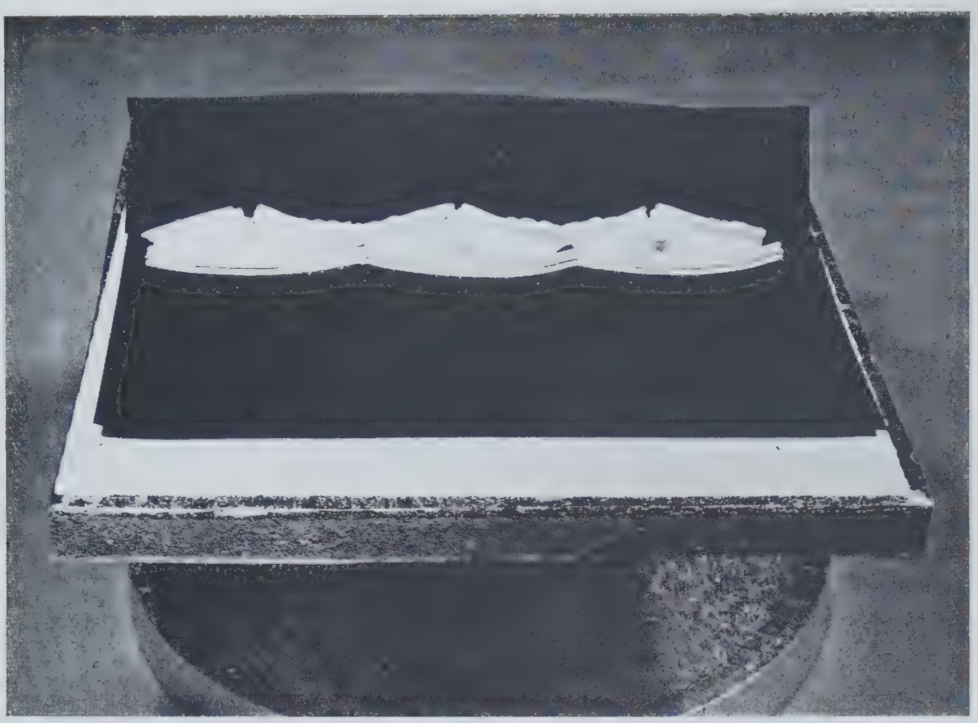


Fig. 10.16 *Base border overpiping.*

We have now illustrated how the scroll border can be modified while basically achieving the same purpose, and in similar circumstances the same treatment is given to the base border. If, for instance, the top border has been piped on the elongated shape then this same shape could follow at the base, and if piped evenly and correctly would not require overpiping as on the top border. By outlining the shape as on the side, this could give sufficient finish. Above the base, adding a circle of silver edging would complete the border with a fairly quick finish and would to some extent match the top border. However, it is not necessary to repeat at the base what is immediately above; far better to have something of a contrast which could be even a simple star or bulb border overpiped, or something a little more advanced which would balance the design, its contrast bringing out the full effectiveness of the top border work.

WEDDING DECORATIONS

Once the design has been agreed, the method of application will be repeated on the two smaller tiers. When the cake has been left to dry awhile it is the custom to decorate with *artificial wedding sprays*, *heather*, *silver shoes* and *horseshoes*. There are, of course, a great variety of such decorations on the market and it is impossible to say one is more suitable than another, so to some extent this must be left to your own personal

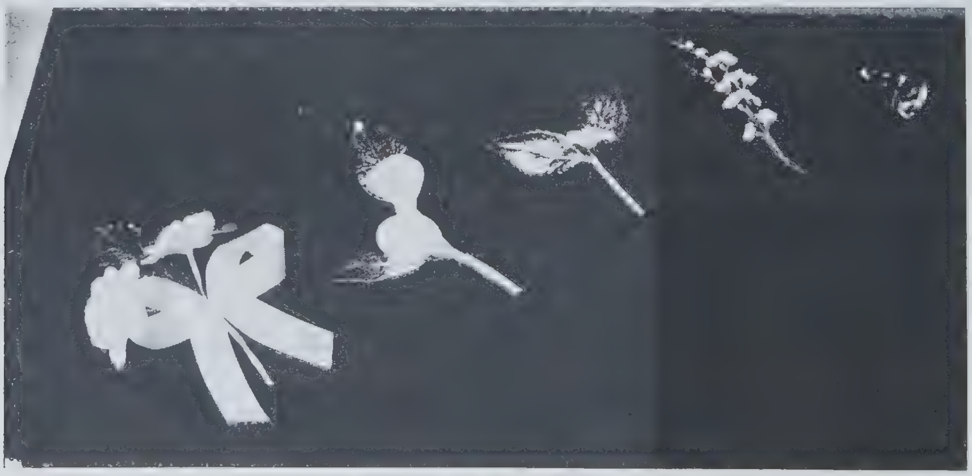


Fig. 10.17 *Wedding sprays.*

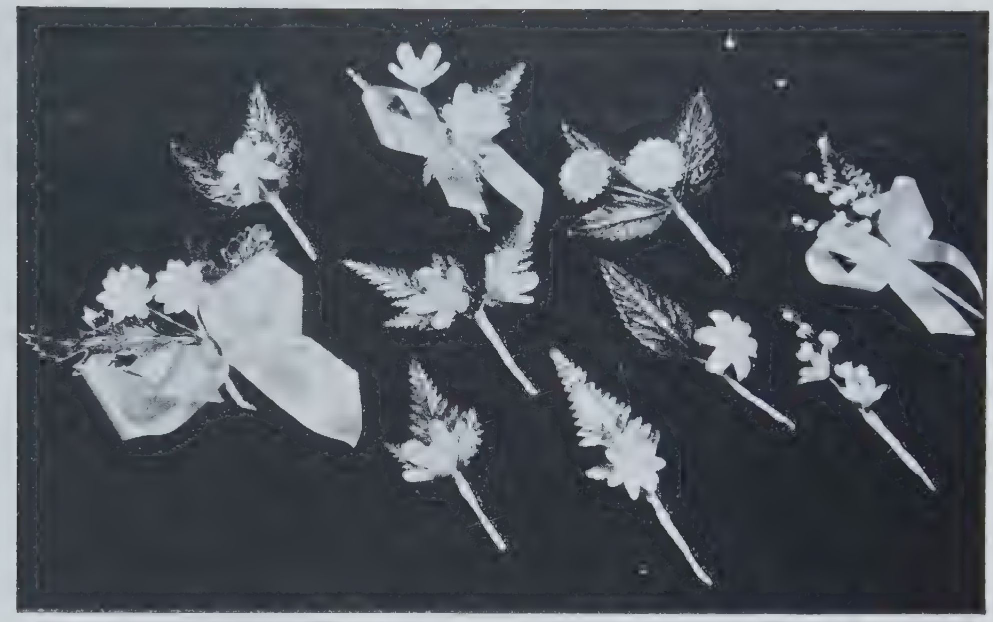


Fig. 10.18 *Floral sprays.*

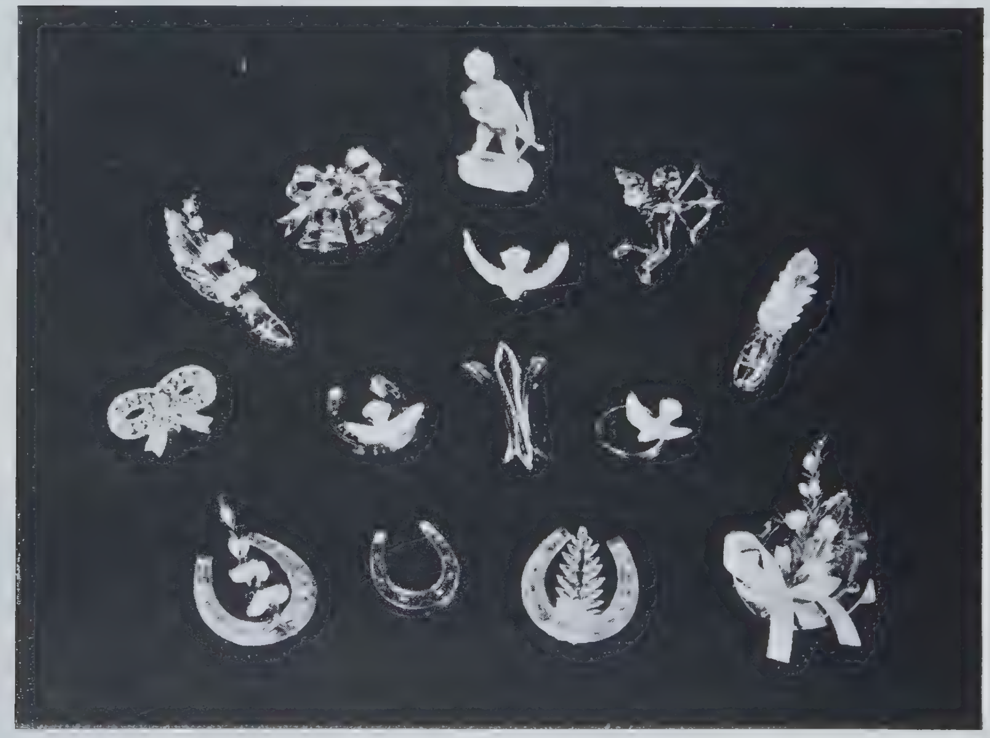


Fig. 10.19 *Cupids, slippers etc, chrome or plastic.*

preference and taste, coupled with the fact that price must be considered.

Over the years I have found that the smaller waxed spray consisting of one or two flowers, a little fern, and leaves was always acceptable, for it was not too expensive and its pearly finish would add some distinction to the cake. Again this type of decoration was improved further with the addition of a small silver bell directly beneath it. This formed a unit of decoration and was usually placed on the top border between the piping. If price permitted, eight units could be affixed or alternatively every other one with a small decoration placed between. These sprays are secured by just piercing the icing on the top border to insert the stem of the spray. The bell is held by a small bulb of sugar. Be careful not to use too much sugar for the effect of the cake can be quite easily marred with unsightly sugar showing. Another suitable decoration is a silver slipper which can be purchased in various sizes; the smaller variety will be large enough, but again the

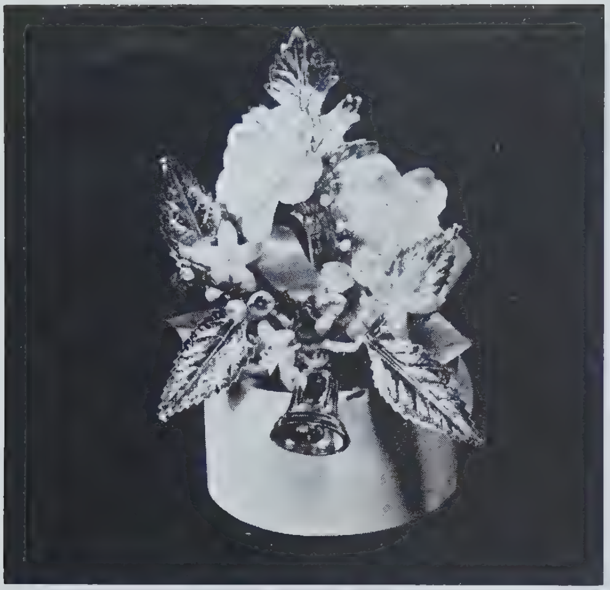


Fig. 10.20 *Various sprays, assembled with silver bell.*

question of four or eight must be left to you. Where a larger cake is required artificial floral sprays in varying sizes can be obtained, some having a bow of ribbon already fixed. These look very attractive, but really only on larger cakes. It is quite common to find such a spray scaled down in proportion so that the same design is used on other tiers. Alternatively the base and top tier can be decorated in the same way, with some minor adjustment for the middle tier.

For the base of the cake perhaps horseshoes are in the greatest demand, for these are regarded as lucky omens. If purchased in metal or chrome they tend to brighten up the base, but again if something less expensive is wanted a horseshoe can either be purchased in double thick card or a smaller simpler form in silver paper. Silver leaves can also be used to advantage together with cupids (ideal for a corner section) or even half-relief cupids as now made in coloured plastic for use on the side, which look very attractive. Cheaper paper ones can also be obtained. So there is a wide variety of decorations from which to select and still be within your own particular price range.

Pillars

The next stage is to consider the building of the tiers and for this purpose ready-made pillars are obtainable in variety. In some of the higher class businesses you will no doubt find many wedding cakes are set up with silver pillars. This was common practice at one time. The pillars were set on a circular ring at top and bottom and on the underside four spikes were fixed to penetrate the icing thereby keeping the cake firm and secure. It used also to be the custom to top the cake with a silver vase, which looked very attractive. However, times have changed and it is more common now to find that pillars are made of plastic. Such pillars are more highly decorative, light but strong, and can be kept for future occasions. All pillars are to be found in $2\frac{1}{2}$ in., 3 in., and 4 in. sizes, the 3 in. size being the one generally accepted. If a cake is large and deep, then a 4 in. pillar may give the extra height. On very large cakes it is usually the practice to make a wooden structure of two base boards with either four or six pillars 4 to 6 ins. in depth, the whole structure then being covered with silver paper. This is really only for very special and

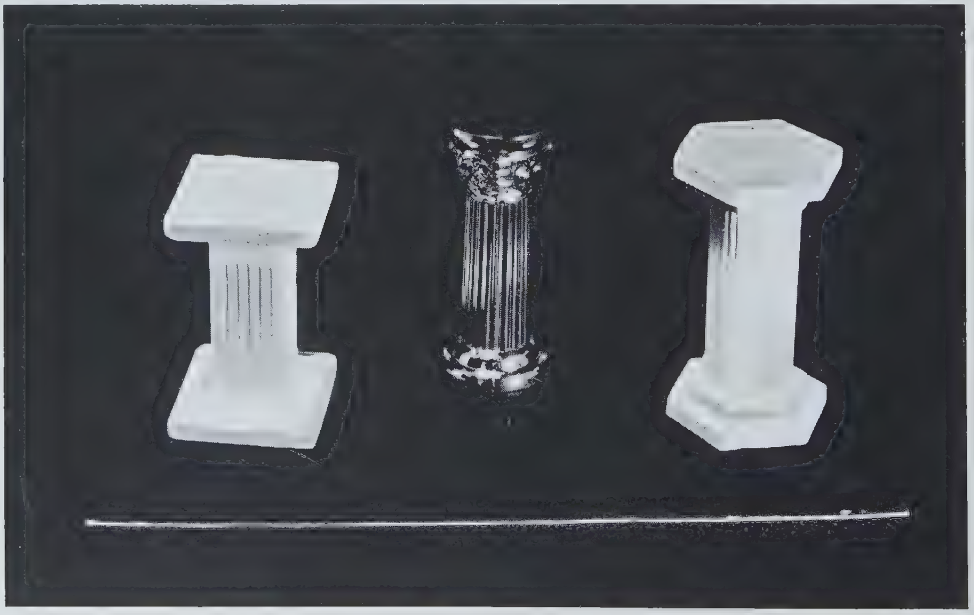


Fig. 10.21 *Pillars.*

extra large cakes, when one must provide a structure strong enough to take further tiers, be it two, three, or four.

Top ornaments

To finish the cake it is surmounted with an ornament made from gum paste purchased through the trade suppliers. Three main types are in general use:

1. A spray of artificial flowers and leaves made in a circular fashion, with one or two silver bells in the middle;
2. A bride and groom ornament which is very popular in some circles;
3. A church tower, generally used to surmount a square cake.

These are the three main lines, although they can be bought in great variety and it is easy here to obtain something of an individual nature – something a little out of the ordinary which can be quite a sales point.

Although this type of ornament was usually modelled in gum paste, it now tends to be replaced by plastic. Perhaps not such a white colour, it is much better for travelling and there is no fear of breakage; also its keeping qualities are assured.

At many present-day functions, especially where the catering takes place away from home, we find that a silver vase of fresh flowers, carnations, roses etc., has replaced the sugar vase in many instances, but some firms will supply a small vase inclusive with the cake which is always an excellent memento for the bride.

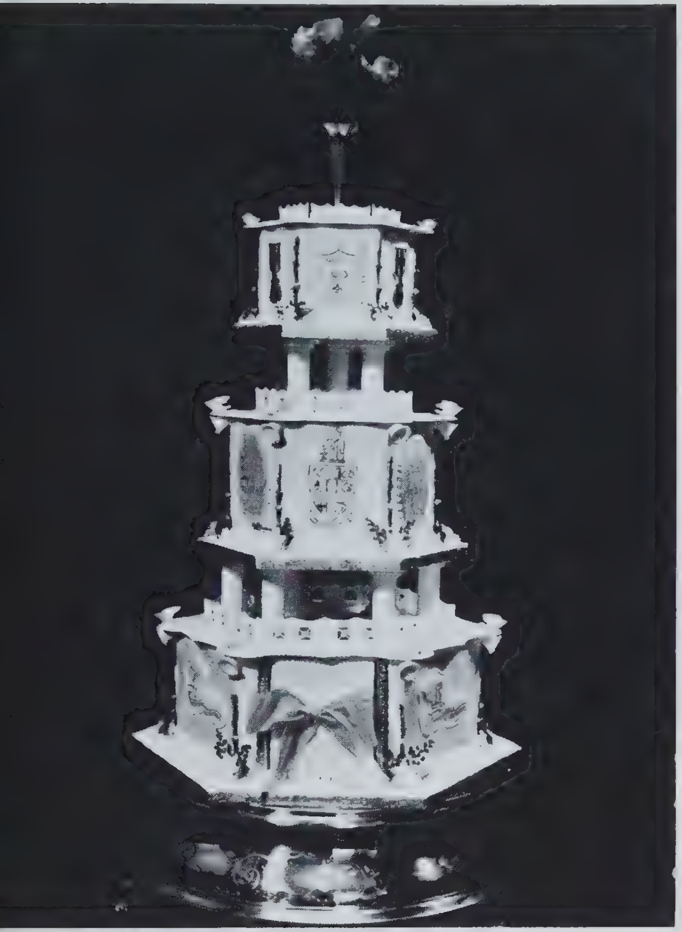


Fig. 10.22 *Three-tier Hexagonal Cake with special motif.*

DECORATIVE STANDS

The final touch to set the cake in its true splendour is by mounting on a silver-mirrored stand; these can be obtained in standard sizes 12, 14, and 16 in., based on the top dimension. A newer type of stand is made with glass top and sides; these are quite attractive in as much as there is a fair amount of reflected light. As with vases, such stands are held at most catering houses and the purchaser expects to be able to hire a stand and knife for the occasion. Usually these are hired out at a small charge. Where wedding cakes are sent over a wide area it can become quite expensive to maintain such a service, for not only do they need delivering but it is always a problem to see that they are returned. The question of overlapping orders also brings its problems where cakes are made in any regular quantity. To overcome this difficulty various other types of stand have now come on the market. Though more simple in design than the silver stand, the idea is to include the charge for them with the cake; as they are supplied on a non-returnable basis you therefore maintain a service at far less cost.

11 Advanced Piping

Circles

The piping of a circle is associated with advanced piping for this is one of the most difficult things to do. A good deal of practice is therefore required to enable a circle to be produced in a precision-like manner. This is partly due to the fact that the two hands must work separately and in opposite directions, but with a little guidance and instruction the difficulties will be overcome more easily and quickly.

Using photographic paper pinned to a board, first draw a circle with a white pencil and as described in line work (p. 24) you first pipe close to the line and then immediately inside. Begin with a No. 3 tube, and to steady the right hand see that the elbow is kept close to the body. First place the point of the tube on the line and press to release the sugar, which must be lifted and suspended so that it will fall directly inside the line. At the same time the turntable is moved with the left hand on the underside, with a slow, steady, smooth movement at a speed that enables you to keep the piped line in position until the end is in sight, whereupon the pressure is released, the turntable brought to a stop, and the line joined as neatly as possible. Smooth off any point with the aid of a small paint-brush.

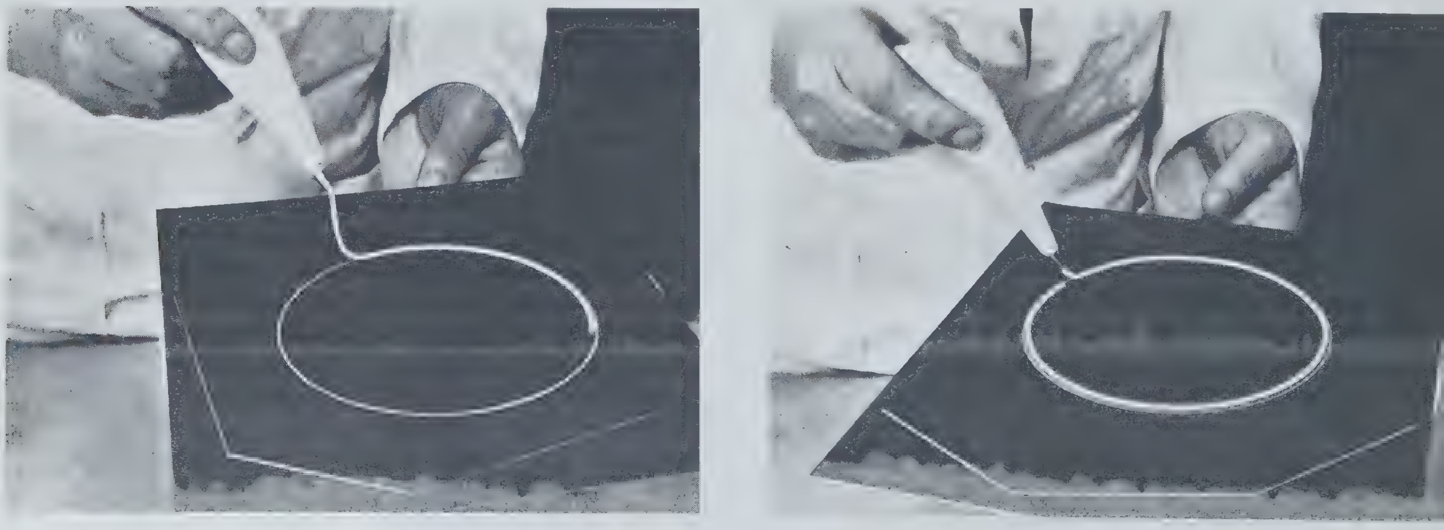
Success is a matter of rhythm. The speed of the turntable must never exceed the speed of the piping – it is a combination of the two that must be learnt. Always allow the sugar to dry a little for then it will be more easily guided into its place; this will be especially noticeable when the second line is piped with a No. 2 tube.

The same action is followed with a No. 1 and No. 0 tube, but be sure to make a good join at the end. If you wish to overpipe, the line must be allowed to skin over or become firm before the second is applied, making sure that the second line falls exactly on the top centre of the first. (If a line falls to one side it can be gently pushed into place with a fine paint-brush.) Keep your hand steady; together with the smooth running turntable this rhythm and movement will soon give the confidence required. When one has become proficient, circles are a good starting-point for many designs, because where a continuous line is being piped as against a sectional curve, a circle is not only quicker but gives the appearance of a larger surface area to the cake.

FLANGE BORDERS

After an initial introduction to circles the designing of a flange border becomes possible. These borders, although somewhat different, can be made to produce some very effective designs and are suitable for any number of tiers. Such designs are formed in phases, owing to each stage requiring a drying period before commencing the next stage.

First, icing is required, well beaten but slightly tightened with dry sugar to help the circle to stand firm and



Figs. 11.1 & 11.2 *Piping a circle.*

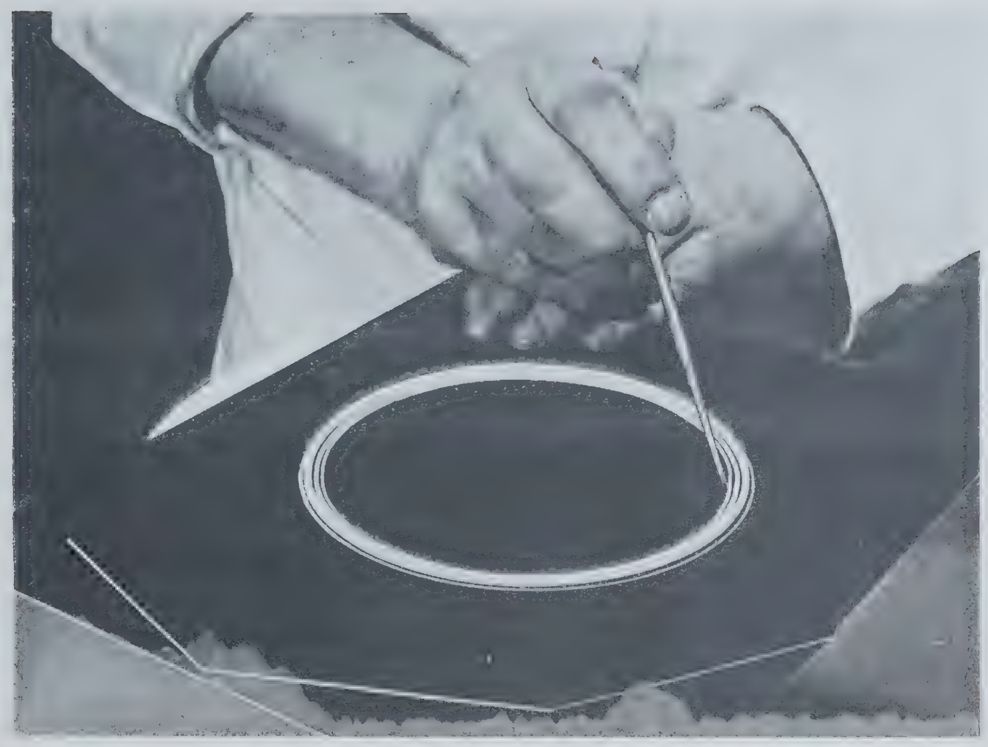


Fig. 11.3 *Line correction of circle with brush.*

dry off more easily. If there is any doubt about the circle, a board of suitable size can be placed on top of the cake and the circle scored with compass point or pointed knife, remembering that the scored circle must not be more than $\frac{3}{4}$ in. inside the edge of the cake top. With a No. 4 plain tube the circle is piped, following the marked circle on either side; never pipe on top as rough edges are always present and cause unevenness. If the first circle is not true or even, further circles will only tend to show up any irregularity.

The next circle is piped against the side of the cake in line with the top, and this is piped by holding the bag in

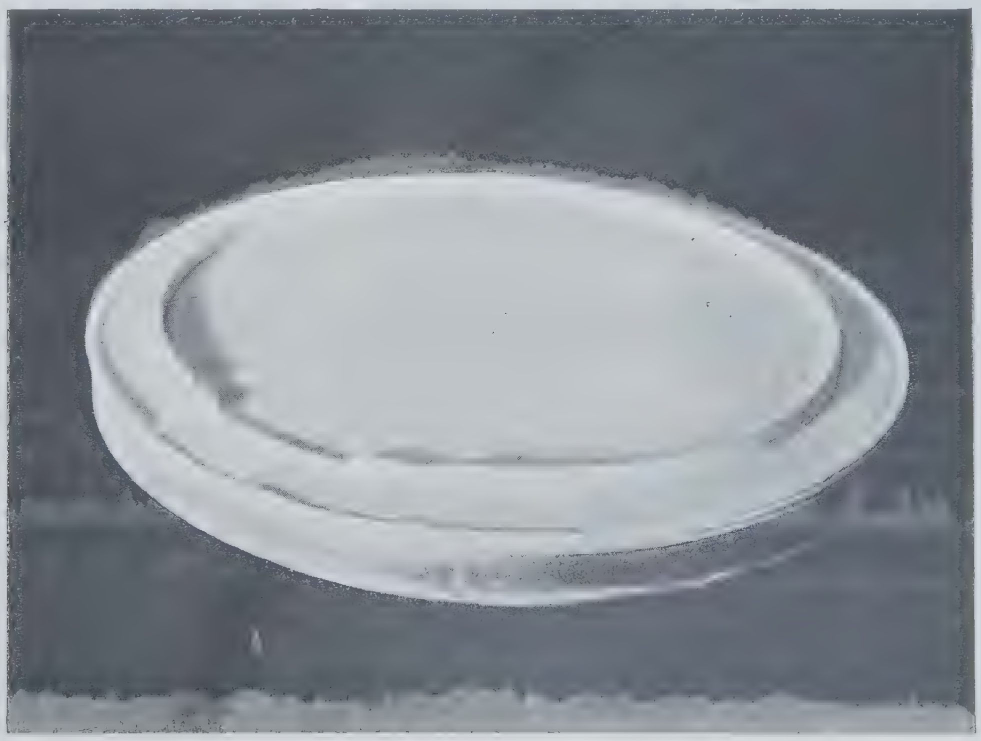


Fig. 11.4 *Flange border build-up of lines.*

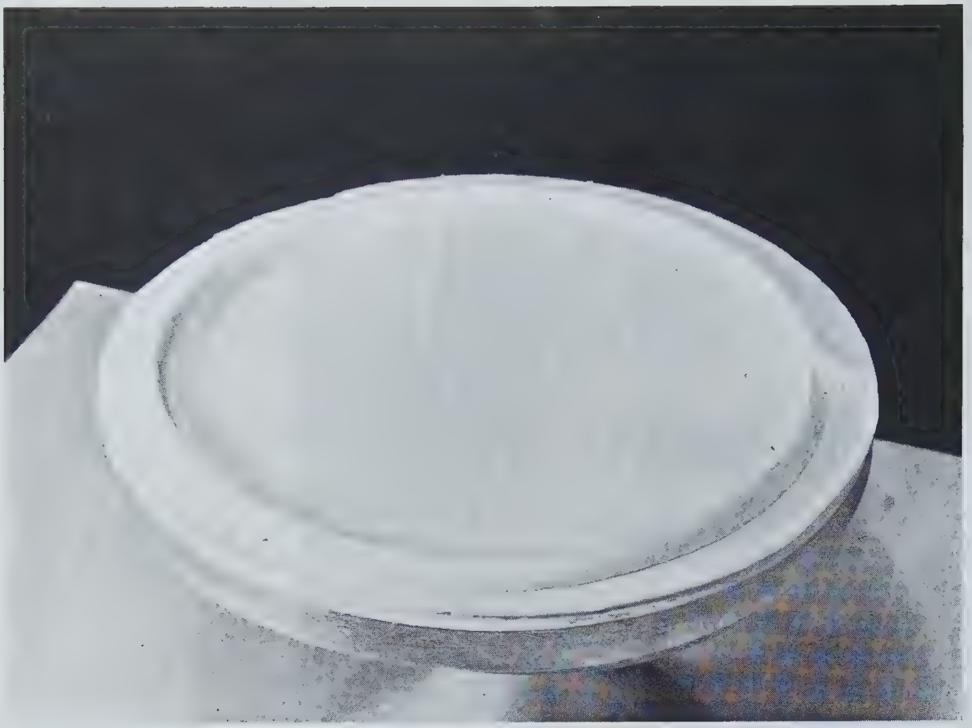


Fig. 11.5 *Filling in.*

the palm of the hand and forcing the sugar to the side, moving the turntable at the same time. If not quite true it may be lightly pushed into shape from the underside (never touch the top edge, for the next circle will fall here). Now pipe a further circle on top of the previous one, keeping perfectly straight and upright, and allow this to dry. Proceed to pipe a further circle on to it with a No. 3 tube in the centre of the second circle on top, and again allow to dry. A further circle is applied with a No. 3 or No. 2 so that there are now four circles on the top of the cake and two circles on the side.

On looking at the border, if you lay a ruler on the edge of the two circles you will find they are now above the base of the cake. It is essential that these circles are dried before the triangular space is covered in with sugar. Using a plain cut bag of sugar and no tube, pipe a ring of sugar around the base of the four circles. This will give some support. Then fill the gap well with sugar, after which it is smoothed off with a small celluloid scraper until clear. Any surplus sugar on the top ring is taken away by allowing the turntable to spin against the edge of the scraper; similarly sugar on the edge of the base circle is removed by holding the scraper in an upright position.

If your circles are perfectly smooth no ridges will be shown on the filled-in section. This is where irregularities, however small, are evident.

Sugar is now piped along the inside of the circles and smoothed by means of the rounded edge of a scraper or even a table knife, surplus sugar is again removed from the top edge and the cake is then set aside to dry. If the surface is now reasonably smooth piping can commence, but in order to produce a finer surface first smooth with sandpaper and ice round again with a soft sugar, both on the flange and the inner side, again taking away any surplus sugar from the edges, and then allow to dry.

Various designs are now piped on this base. First divide into six or eight and pipe in loops or straight lines with a No. 2 tube from top to base, always allowing a little more space at the base and commencing the next line almost touching the previous one at the top.

Net work can also be incorporated. This can take longer than one thinks, but is nevertheless very attractive.

Now in each design finish the top and base edge with small scallops with a No. 1 or No. 2 tube. The underside has silver edging around as a finish, while on top of the cake two or three graduated circles are needed.

BASE BORDER

This border can be piped in two ways: flat on the base board or as a raised border. For the latter, commence by piping a line with a plain or small finely-cut star tube round the side of the cake to form a ledge $\frac{1}{4}$ in. from the base board. Then pipe a circle around the perimeter $\frac{1}{4}$ in. inside the edge of the base board and allow to dry. When dry pipe alternate lines with first a basket tube and then a No. 2 plain tube from the ledge on the side

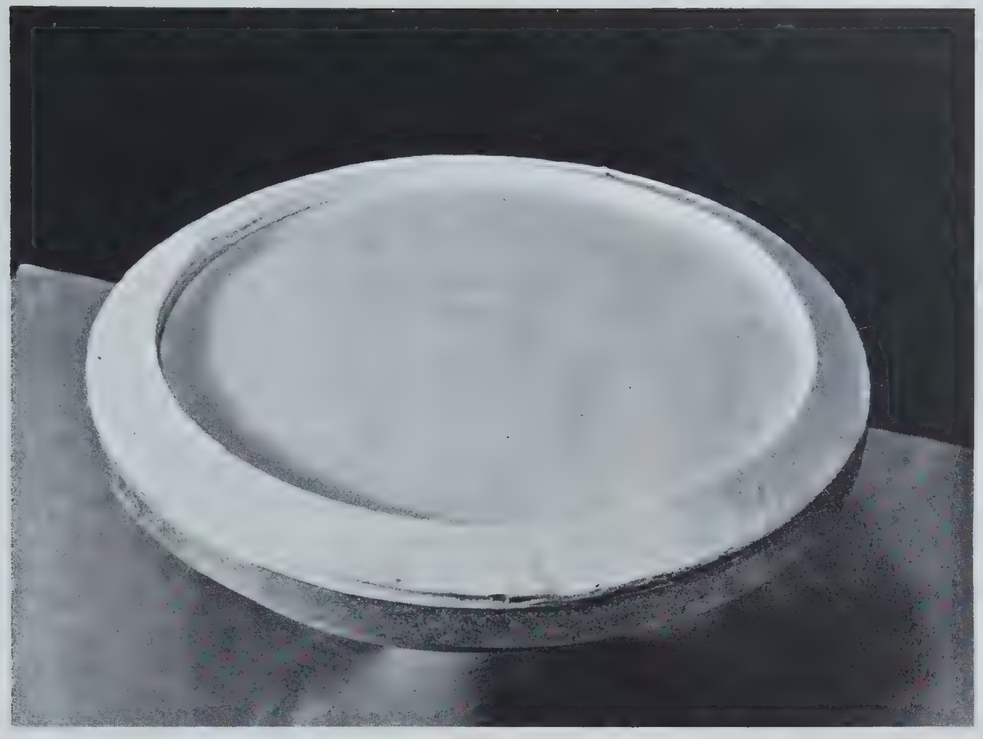


Fig. 11.6 *Soft coating and take off.*

Fig. 11.7 *Base border 1.*

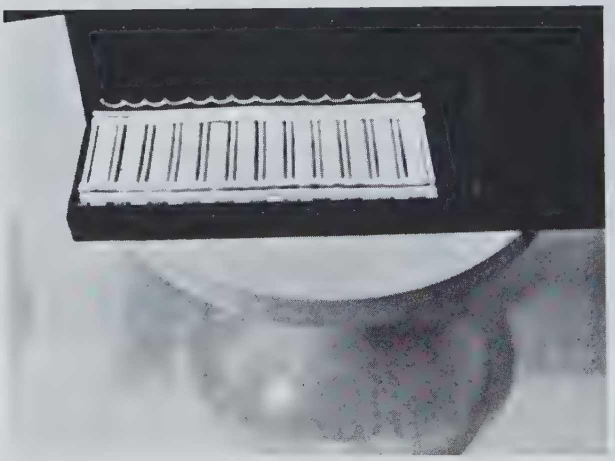
Fig. 11.8 *Base border 2.*

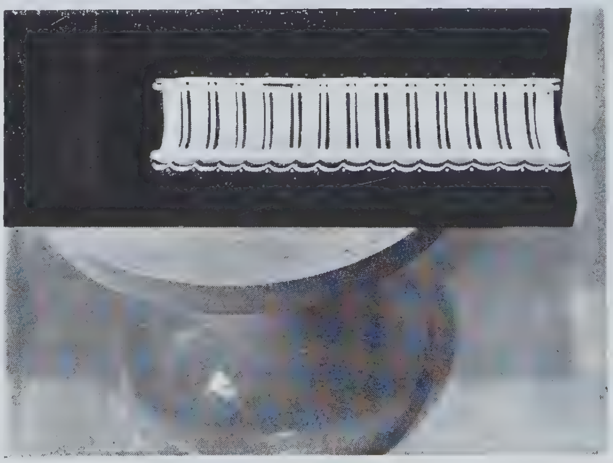
over the line on the base board. Again be sure the space at the base is wider than that at the start, the difference of two-sized circles being taken into account. Finish, as above, with silver edging above the ledge and two graduated lines on the base board.

Although this cake is shown in stages, it will be apparent that at least some of the piping at the base can be done in conjunction with the preparation of the top, or at any rate during the process of drying.

Soft sugar work

The introduction of soft sugar borders was first seen at the pre-war exhibitions and thus created a new style – a different shape and much cleaner appearance. Through the years this type of work has become increasingly popular and developed into a very fine art, modern in its outlook, pleasing in design, and a means of encouraging the student to achieve real artistry in the craft by studying the delightful and delicate patterns that are regularly seen throughout the larger exhibitions. The scope of this work is exceptional and ranges from a simple plaque or ring of sugar to the most intricate and delicate structures. To be able to do this work one must have an extensive knowledge of drawing, the elementary stages of which have been dealt with in Chapter 9. But it is now necessary to prepare rather more advanced designs, with a desire to include a modern theme.





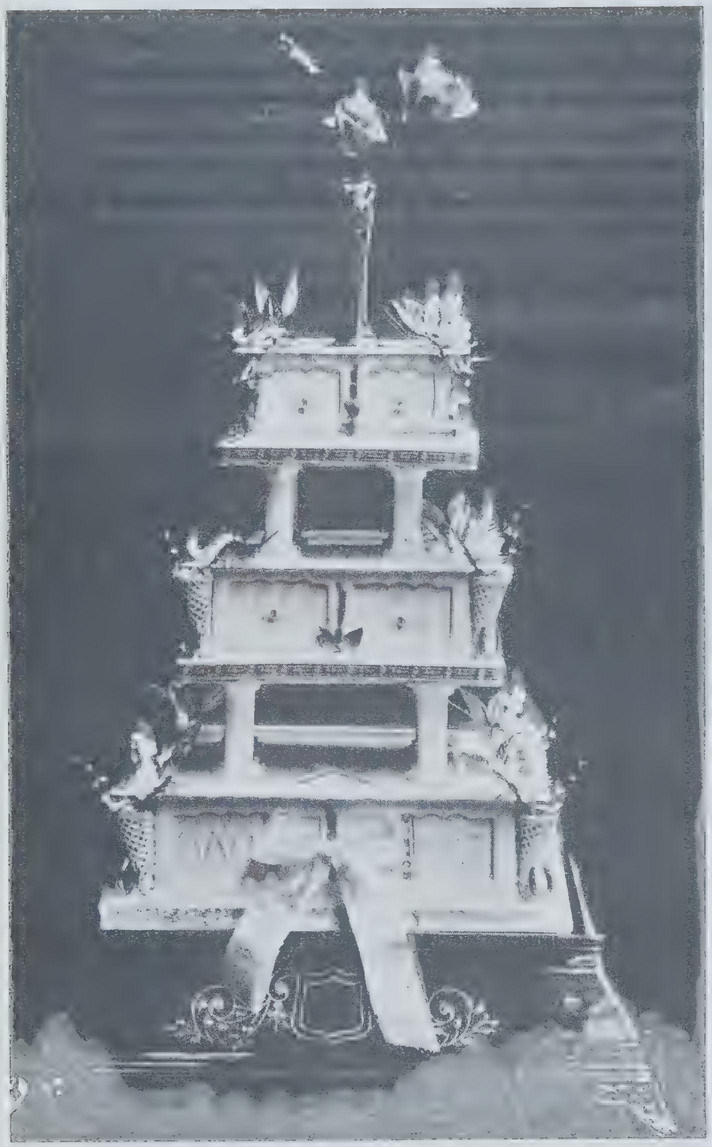


Fig. 11.9 *Special Three-tier Wedding Cake.*

Wax-Papers and Brushes

To reproduce this work certain other materials will be required. Firstly a good wax-paper. Some have both sides waxed and are rather thick, but they are useful where a large run-out border is required for they give a certain amount of strength and support. Then a thinner type – some waxed both sides, some one side only. These papers are ideal for the smaller delicate patterns, as they allow the sugar to dry quickly and are more readily peeled away. Most manufacturers stock such a variety of wax-papers that they should be tried before you finally decide on one to your liking. Always remember that wax-paper needs to be creaseless and is best pressed prior to use.

A good paint-brush is also necessary – preferably a No. 2 in sable, obtainable at any artists' shop. How to tell a good brush: dip into water, then shake the surplus away and the brush should form a fine point. The purpose of the paint-brush is to correct line faults and to remove any air bubbles that appear in the sugar.

PREPARATION AND METHOD

The preparation of the icing is done by several methods, and consists of beaten sugar which is at least a day old. Providing the icing is not too soft or light, a smooth glossy surface will emerge in the prepared sugar. Sugar must be reduced by adding sieved albumen solution to arrive at the correct consistency. It can also be reduced by the addition of water. Either of these methods is suitable, providing the icing has been made with albumen not less than 2 oz. to the pint; if 3 oz. to the pint is used, then water will be sufficient. On no account must the strength of the sugar be decreased – sugar reduced with whites will become much more brittle when dried out but at the same time retain its strength. Never beat the sugar at the reducing stage; always stir in a circular manner, thus preventing the incorporation of air. Sugar reduced for this work should stand for a while prior to piping. The consistency should be such that the lines left by the movement of the spatula disappear, but not too quickly.

The design is drawn and a piece of wax-paper placed over the top. Pin down at each corner or secure with a small-pipe bulb of sugar. Using a plain No. 2 or 1 tube, depending on the size of the border, first pipe the outline, making sure all joints are brushed level and no points are left.

The prepared soft sugar is now placed in a bag and the design filled in. The method of filling again depends on the size of the design. With small units always start at the outer edge, making sure the sugar is filled to the outline, and then work to the centre. But where larger borders are needed and until this work is done with a fair amount of speed, each section should be completed before commencing the second. For instance, if the border consists of eight sections or curves, complete one then continue with the next to the right, but with the third section move to the left, and so on, until the whole is filled in. The idea is to prevent the edges drying, thus leaving a mark, for all run-outs must knit together quite freely. As each section is complete it will be seen if any air bubbles appear. If they do, then just burst them with the point of the brush and work the sugar to and fro to obtain a clear surface. As the work progresses, experience will show that in the smaller units the sugar can be worked a little thicker – a necessity where relief piping is required.

To sum up: in the art of soft sugar work the following points should be observed:

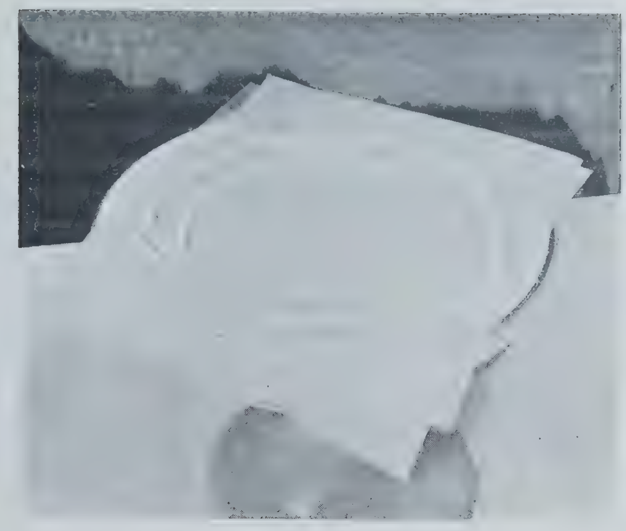


Fig. 11.10 *Piped outline.*

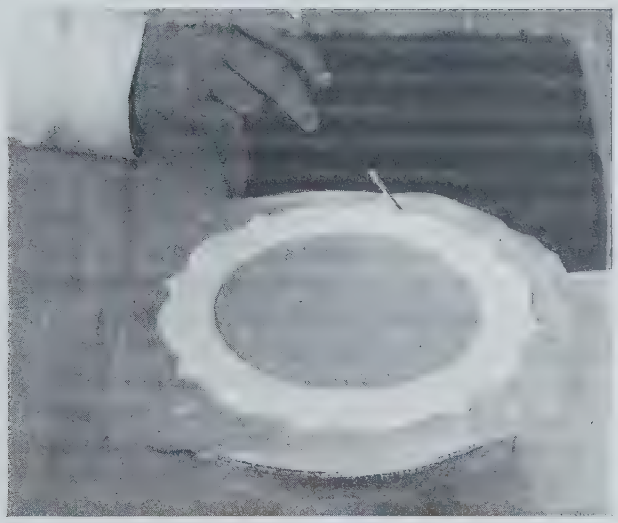


Fig. 11.11 *Completely filled in. Brushwork.*

Soft sugar should be filled to the top of the outline but must not overflow.

Too soft a sugar will flow too rapidly and will take longer to dry and tend to collapse in the centre.

With sugar that is too thick, difficulty will be experienced in obtaining a smooth surface.

Run-outs should not be made in too dry an atmosphere, so that the whole of the section can be completed before drying.

A gentle vibration with the fingers is sometimes an advantage in correcting the smooth surface.

One of the indications of a perfectly made run-out is the sheen or gloss when dry. To achieve such a result the sugar surface is dried quickly under heat by small electric fire or heater and then transferred to a heated drying cupboard.

If subjected to direct heat the sugar will dry much more quickly, but if the heat is too great it will melt the wax on the paper which will be difficult to release when cool, and the sugar piece will buckle. It is essential to have the run-out perfectly flat without ripples in the paper and for this reason, when the sugar has run in, transfer the shape on to a sheet of aluminium or metal – something that will remain rigid.

Great care in removing the soft-sugar piece is necessary, and it is done by easing the corners of the wax-paper with the thumb and forefinger and drawing it on to the metal sheet at the same level or just below. Unless this operation is carried out carefully the sugar will tend to ripple, thus losing that smoothness we are trying to maintain.

With most of the exhibition run-outs a piece of glass is found to be most useful, providing it is not too thick. Then the shape can be piped on to the wax-paper with the drawing underneath, and there is no necessity to transfer for drying.

This is particularly advantageous where the design is very complicated, or where large, more fragile pieces are required.

A summary of the basic principles of soft-sugar work has now been given, and these principles, if practised and thoroughly understood, will serve as a sound foundation, as a progression of this work is given in ensuing chapters.

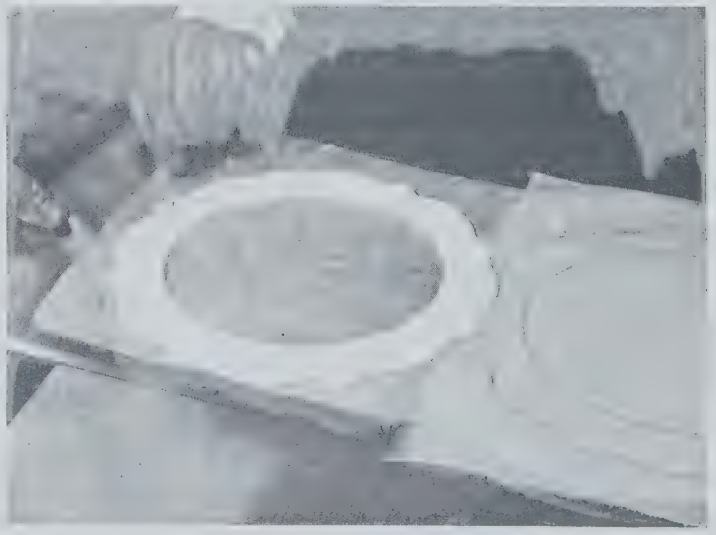


Fig. 11.12 *Transfer run-out to metal sheet.*

12 Modern Designing

THE preparation of a run-out border for a three-tier cake is the first subject to be considered and at this stage one must not stray from its commercial aspect. Therefore the design will be for the top border only and will be divided into eight sections, allowing eight curves and eight points.

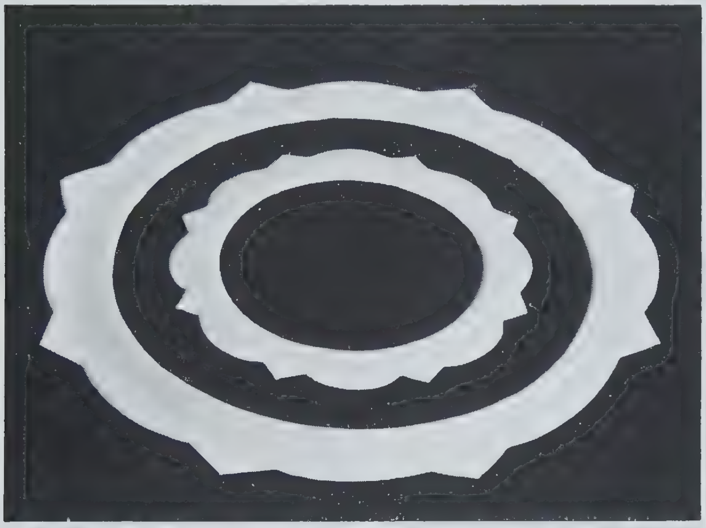


Fig. 12.1 *Run-out complete.*

Three-tier design

The same feature is carried out on all three-tier cakes, and to give further emphasis to the top it is proposed to add a further ring of sugar to be placed directly on the first border. It is on this ring that the relief piping will be made and at the eight points of the main border any artificial decoration will be used. The base border again will be divided into eight and piped with a star tube in a graduated rope design and outlined with a plain tube. Again the main decorations will fall in line with those in the top border.

The diagram shows how the design is produced in its division and curves; the circles are also drawn in for the rings, plus suitable ornamentation. Usually the top and base tier can be drawn together on one paper, with the middle tier separate. The rings also must be piped separately and prior to the main border when these are dry and have been removed ready to place on the cake.

REMOVAL FROM WAX-PAPER

To remove from the wax-paper, two methods have their own uses. First the sugar can with care be reversed on to a board and the paper peeled off, or secondly the design is allowed to overlap the board and the paper is

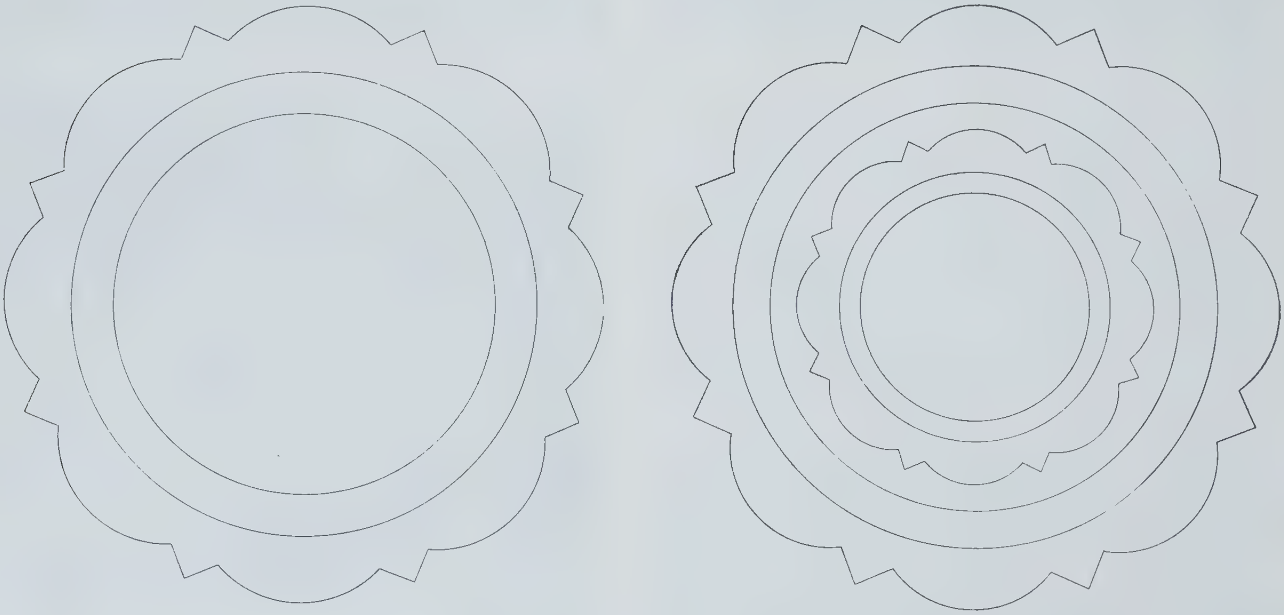


Fig. 12.2 & 12.3 *Three-tier drawing.*

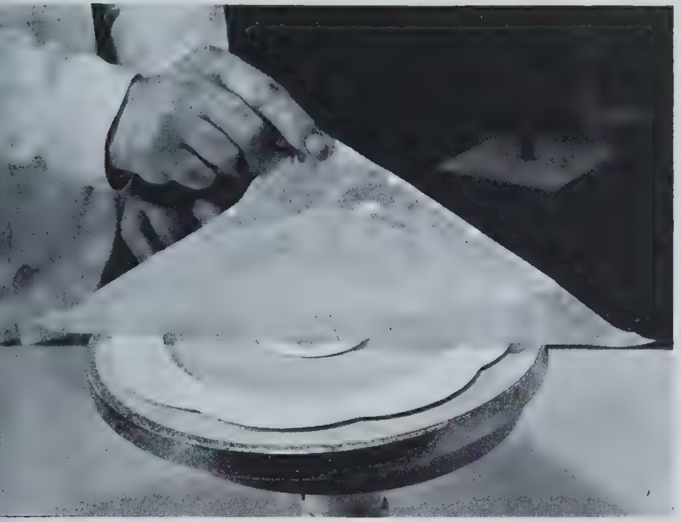


Fig. 12.4 *Removal of run-out, reverse side.*

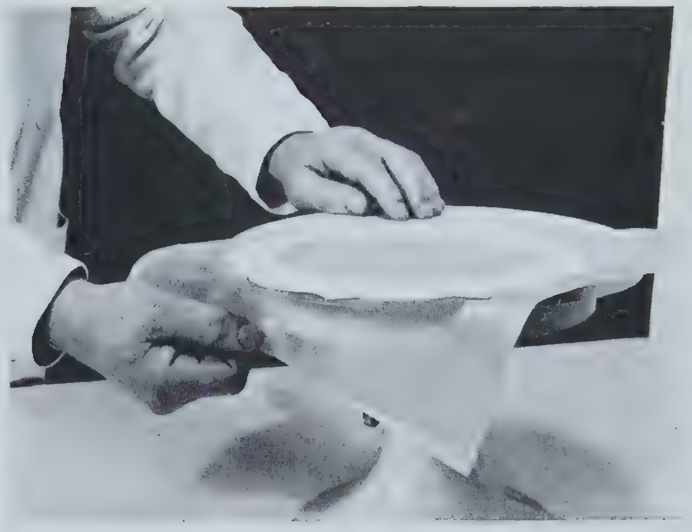


Fig. 12.5 *Peeled from the underside.*

peeled away or released carefully a piece at a time, moving the board round until all the design has been freed. This is especially applicable where large designs are involved, but with some of the small pieces it becomes easier to turn them over.

APPLYING BORDERS TO CAKE

To fix the border to the cake, well beaten sugar is piped around the under edge of the border – the part only that comes in contact with the sugar coating. Make sure the border is centrally situated before a little pressure is given to affix it. Remove any surplus sugar from the underside that has come in contact with the side, and any gap left between the side and border should first be filled before the whole side is completely finished off. Similarly on the top, any space between the border and cake surface should be filled in, but do not have the sugar too stiff. Remove any surplus with a palette knife or brush and always keep as clean an appearance as possible.

The next stage is to finish off this inner border by piping small bulbs of sugar around the edge, the size of which should not bring them above the run-out, and if spaced evenly with a nice rounded appearance they look most attractive.

Now pipe circles with a No. 2, 1, or 0 tube as near to the bulbs as possible without touching. On the underside of the border a row of bulbs is piped, or if something quicker is needed then a silver-paper edging gives sufficient finish. When this border has been completed then the ring is removed and piped with sugar on the underside and fixed in position on top of the main border. Secure with the same even neatness as the main border, and pipe along the outer edge even smaller sugar bulbs with a No. 1 or No. 0 tube. A small scalloped edging is now piped on top of the ring with a No. 1 and a dot placed at each division. If desired to give a little more finesse, the edge of the border could be piped with a No. 1 or No. 0 tube in the form of a dash and three dots.

SPRAYS

Artificial decorations have been selectively positioned so as not to distract from the focal point of the sugar run-outs. There is a wide range of wedding sprays on the market from which to choose, but when a fair amount of cakes are produced throughout the year you may preserve a certain individuality by having a spray or favour made to your own design. By the assembly of selected leaves, flowers, fern, or ribbon it is possible with the help of your supplier to create something you will not find repeated elsewhere. This used to be quite commonplace, but the tendency in some quarters is to have a fairly large spray which tends to be more important than the sugar work.

Square wedding cakes

The square wedding cake is becoming more and more popular today, possibly because it is easier for cutting and a rectangular piece is always served at the reception – quite apart from the shape of the wedding cake box which is used for post.

The main problem is to maintain a good square corner during the coating, for without this the attractiveness is lost. The squareness is also expressed if a run-out border is designed for the top, and whatever form the design may take, at least $1\frac{1}{2}$ ins. should comprise each

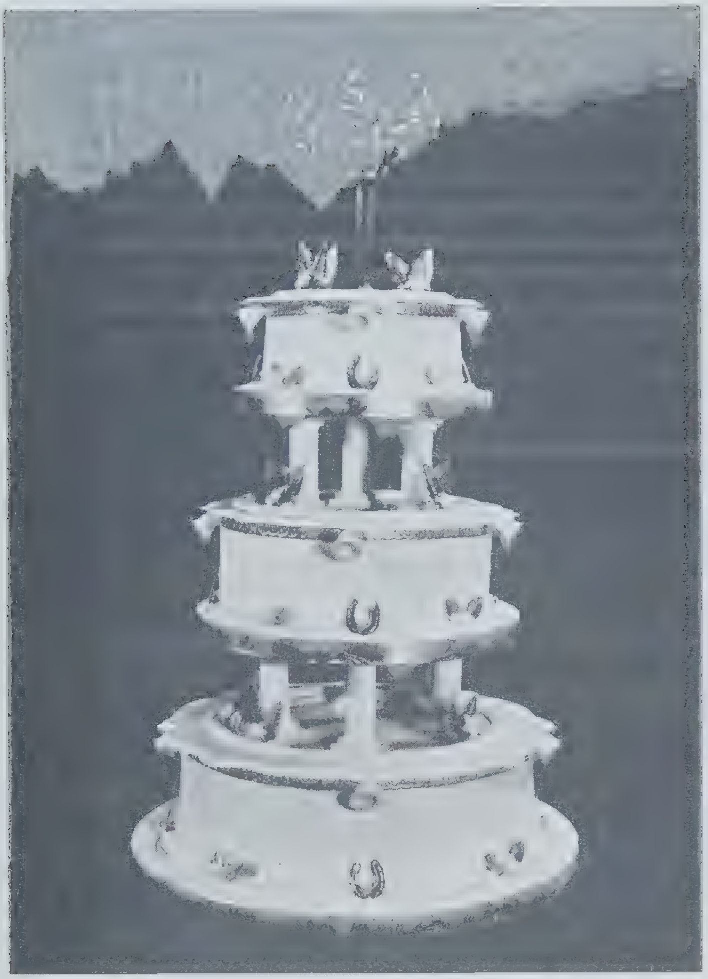


Fig. 12.6 *Three-tier Wedding Cake.*

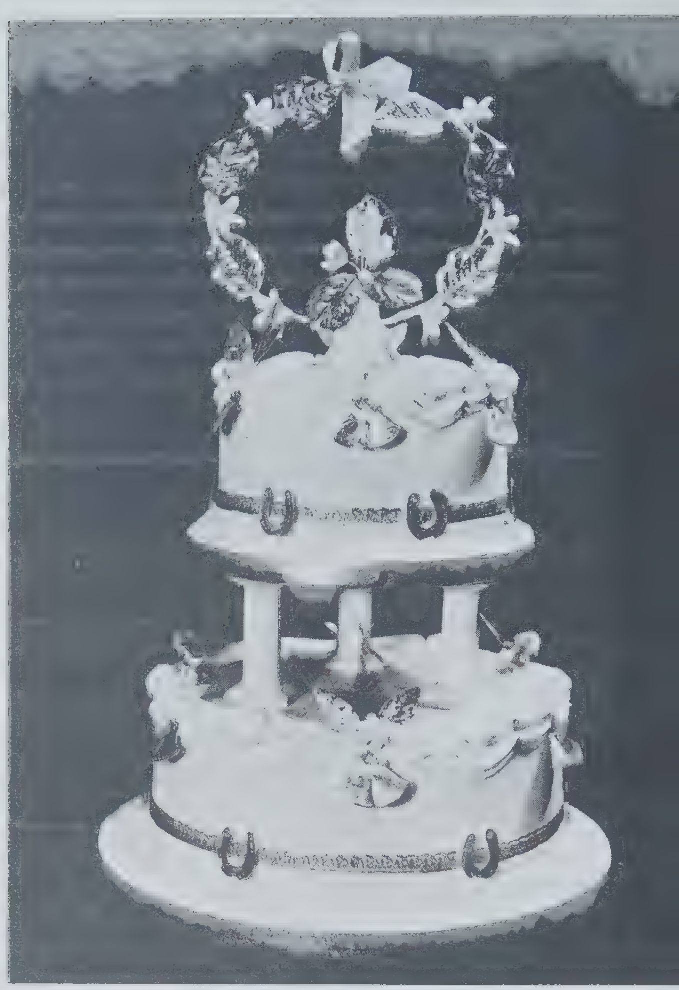


Fig. 12.7 *Two-tier Cake with scroll border.*

squared corner of the base cake. The section of the run-out between these two points can be designed with scrolls, scallops, or whatever you wish.

As with the round cake, the designs are drawn out first and filled as before. One alternative with the square cake is that a sectional run-out may be piped in such a manner as to fit each corner. Then the centre-piece of each side is piped directly on the cake to make for continuity in the border. The line work on the inner side and below the border will give the required finish.

Borders of many styles are piped direct on to a square cake, some of which make an exceedingly quick finish. The base border does not want to be too small or else the cake will look top heavy, but if scallop scrolls are used and finished with a minimum of line work above, this should be sufficient to make them attractive. In almost every case the decoration is left to corners and a wedge can be cut without great difficulty. Any of the foregoing designs are suitable for either two-tier or single-tier cakes, but alternative designs will be illustrated.

Hexagonal cakes

There are occasions when a special cake is called for – something to communicate its importance, something a little more outstanding than usual. It is on these occasions that the hexagonal cake is an ideal example of the most modern approach to the decoration of a cake.

Probably a little more time is required, but when one thinks of the purpose and its fulfilment, the unusual interest that such a project can create, it will always be felt that the extra effort is worth while. Cakes of this type, however large, are best baked in shallow units and then layered together with almond paste rather than trying to give a much longer bake to the thicker cake and risking the possible uneven baking and crusting at the edges.

Frames or tins are purchased identical in size so that very little levelling is needed, as the cakes are layered in the various tiers. Once the cakes have been prepared for icing, place them on a suitable sized board the same in

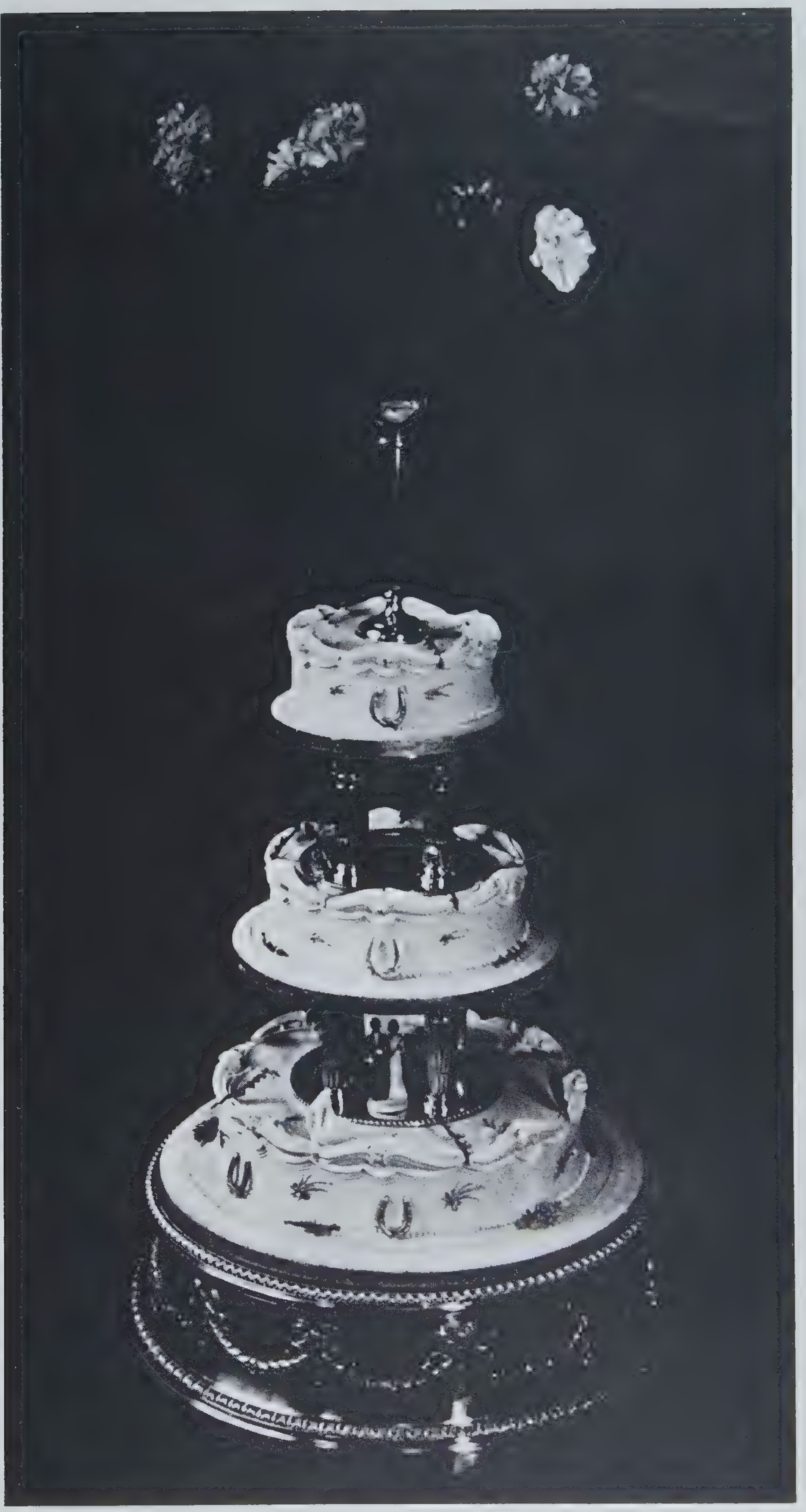


Fig. 12.8 *Three-tier Wedding Cake decorated with scrolls and net work, as demonstrated to students.*

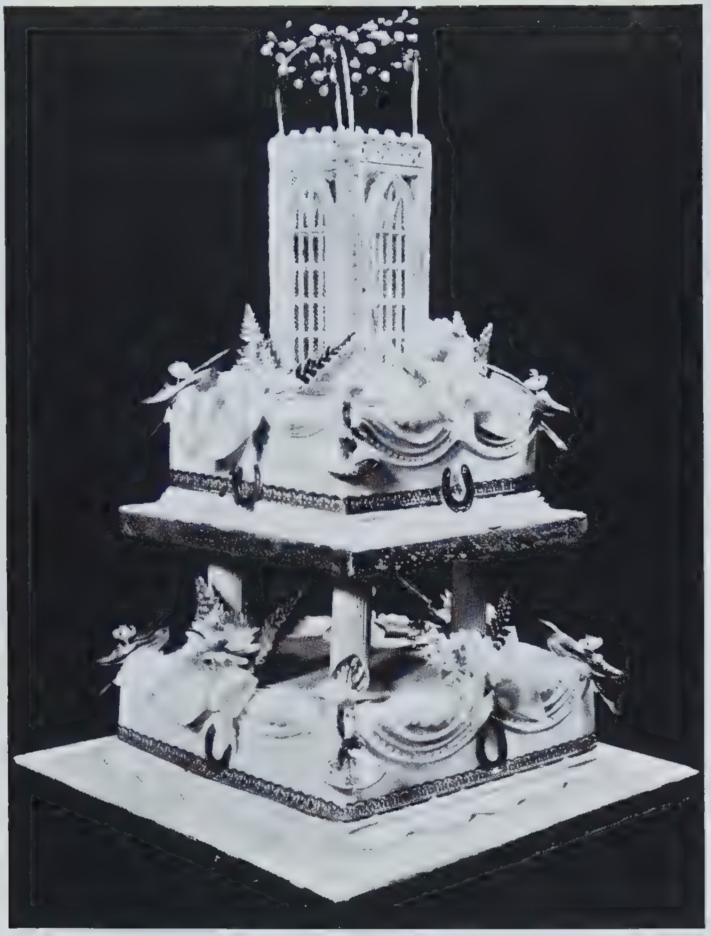


Fig. 12.9 *Two-tier Square Kensington.*

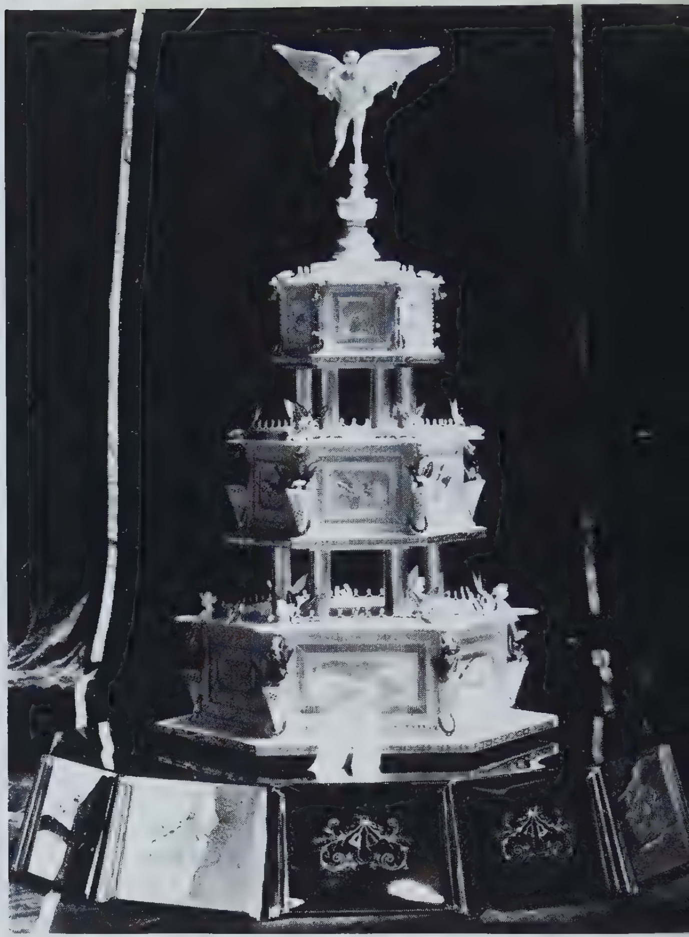


Fig. 12.10 *Three-tier Hexagonal.*

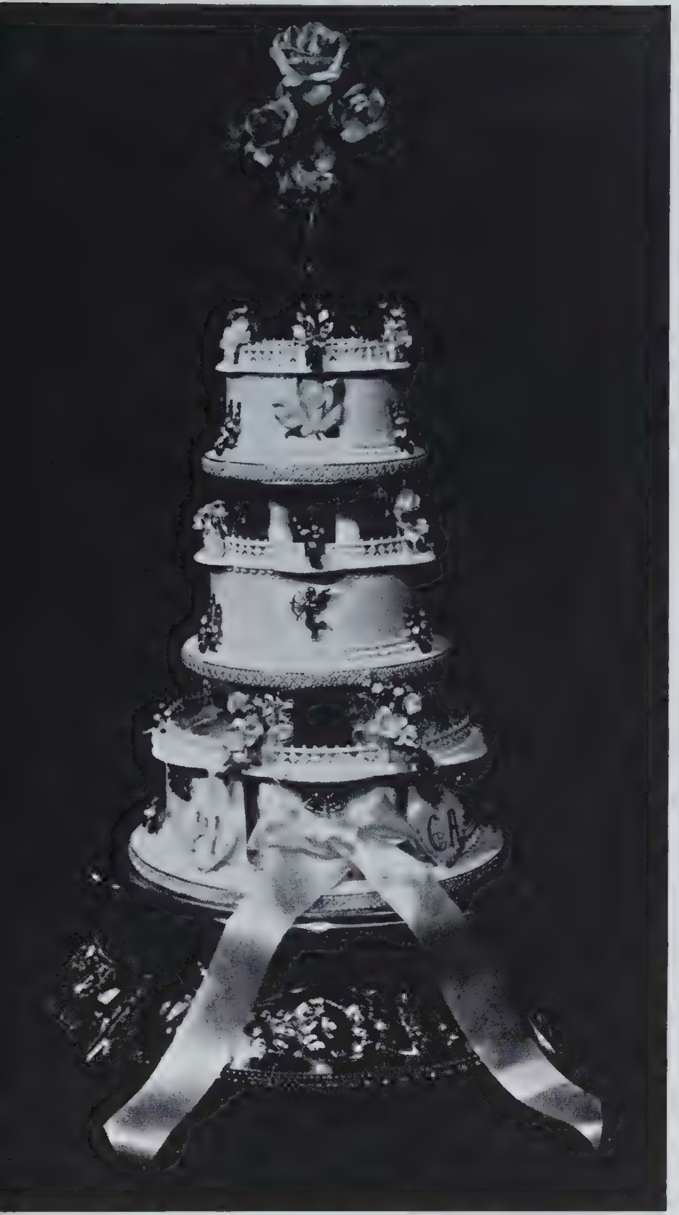
shape, allowing a depth of at least 2 ins. along the base, with a corresponding board depth on the remaining tiers. Coat the cake as previously described, paying attention to alternate panels, once the cake is iced, and keep a check that the measurements throughout coating are kept as regular as possible until the final coating has been completed. It is at this stage, when the final dimensions of the iced cake are known, that it is possible to begin the actual designing, although there has been no doubt in the mind all along as to what style is anticipated.

The first consideration is the top run-out border, and in this particular instance it was decided to have a circular design at each corner on which to build the decorations, and along each side a scroll or curved edge, so that the outermost point would fall directly in the centre of each scroll. The same curve would then be carried out in each side panel and all four sides as illustrated. The size of the side panel can either be made to meet at each corner or about $\frac{1}{4}$ in. inside the corner, whereupon a smaller panel will be required to fit over the two. The underside of the top run-out is completed with a neat bulb border, and a similar border slightly larger is piped at the base to cover whatever space is left between the board and the base of the side panel.

FIXING THE PANELS

This base border may be overpiped according to size and then the base board lined up as usual, following the design of the top run-out. When fixing the side panels, always be sure they first meet the top border; they are easily held in position by a little piped sugar at the base board until set, when the base border is then proceeded with.

The panels of decorative work which stand up on the top of each tier are made by measuring the inside of the run-out, and they are fixed to the inside of the run-out, which in turn provides the necessary support for travelling; alternatively these pieces are assembled to fit on top of the run-out as near the inner edge as possible, but then either a further run-out or piped border must be made along the base as a support. These pieces can, as on the sides, meet at each corner, or a small gap can be left, sufficient for the spray to be inserted in the sugar. On the inside of these pieces a bulb border and graduated line are all that is required.



12.11 *Three-tier Wedding Cake.*

pecially designed in a pale cream shade to match the Bride's dress, and rated with favours, designed and made to the same colour.

n excellent example of simplicity in design, neat, easily produced with ern run-out borders with contrasting style of decorative soft sugar work he top of each tier. The base borders completed in the orthodox styles, ium size bulbs finished with graduated lines above and below.

itials were coloured on heart-shaped plaques. The top tier had, on each a full tea rose, coloured cream to shades of pink with the contrast of the green of the Rose leaves. A vase of fresh roses completed the cake.

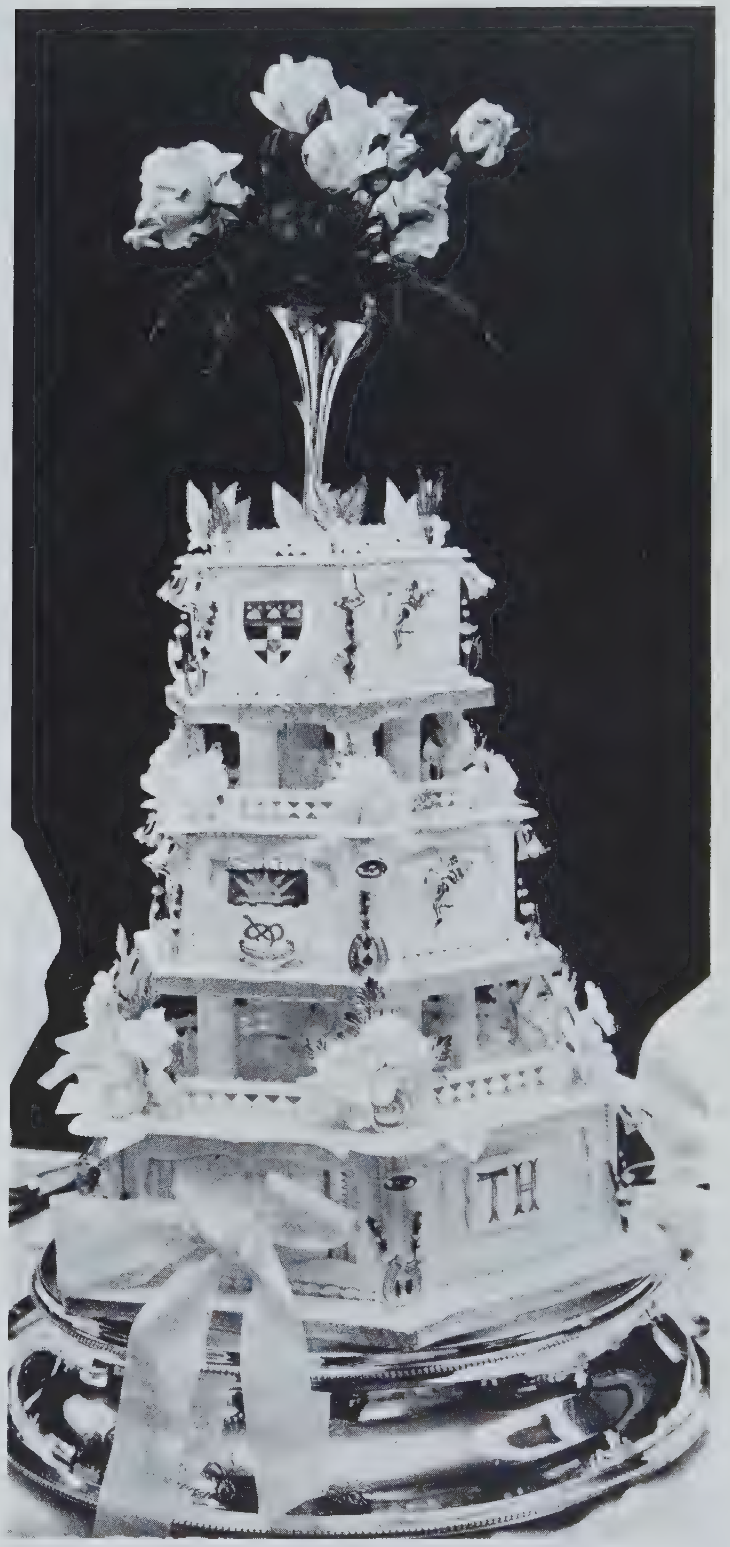


Fig. 12.12 *Three-tier Wedding Cake designed to include all processes demonstrated.*

13 Celebration Cakes

It is usual to celebrate the twenty-fifth wedding anniversary – an important milestone reached in married life. A silver wedding cake is a gracious contribution to a most important event.

Silver wedding cakes

Such an occasion is celebrated either in the form of a large function or something of a more private nature or family party. Generally the cake for this very special day will be a wedding cake in miniature and usually in a single tier. The quality is only the best and the decoration and design are composed in a simple, neat structure. The decorations vary and are somewhat limited, but silver bells and lucky horseshoes can be included.

The main feature in these cakes is to have **25** in large figures surmounting the top of the cake. In the past it was very common to find that the overpiping was given a coat of silver with a small brush, but always looking at a cake from the point of view of its edibility, this is something we should not indulge in, but would rather use the silver decorations to emphasize this occasion.

The design chosen for this cake is completed with a run-out border divided into eight divisions, with a secondary ring of sugar on the inner edge. Notice the small circles of sugar designed for the centre in which the figures **25** are set. This circle can be placed directly on the cake, or a ring of sugar piped with a No. 4 tube and allowed to dry will lift the ring away from the cake. A row of small dots and three circles inside the ring complete the top. Silver edging as used on the sides and the base, completed with the usual star tube border, is overpiped with a C scroll and outlined with a No. 2 and No. 1 tube. The outer edge of the run-out is also lined and piped around the edge with small bulbs.

Finish the sides by neatly fixing silver bells and complete the top with a single spray of silver leaves, heather, and flowers.

Golden wedding cakes

Although there is a fair demand for the celebration of this occasion, it does take the form of a complete family gathering. The fiftieth anniversary is a most important one, and as such the confectioner should be prepared to summon all his professional skill to produce something particularly fitting to the occasion.

A golden wedding cake is treated in much the same way as one for a silver wedding, with the inclusion of gold decorations to set the cake off. Leaves, horseshoes, bells etc., are all obtainable, along with gold edging, and a large gilded **50** is usually placed on top. With a heather and flower spray a neat effective arrangement can be made.

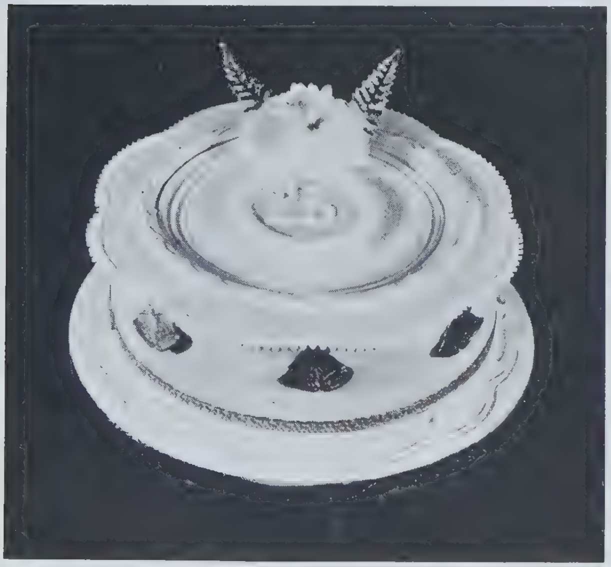


Fig. 13.1 *Silver Wedding Cake.*

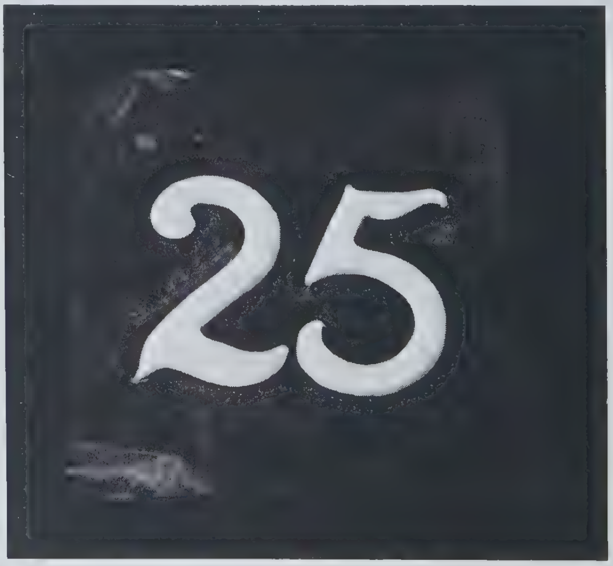


Fig. 13.2 *Figure 25 piped.*

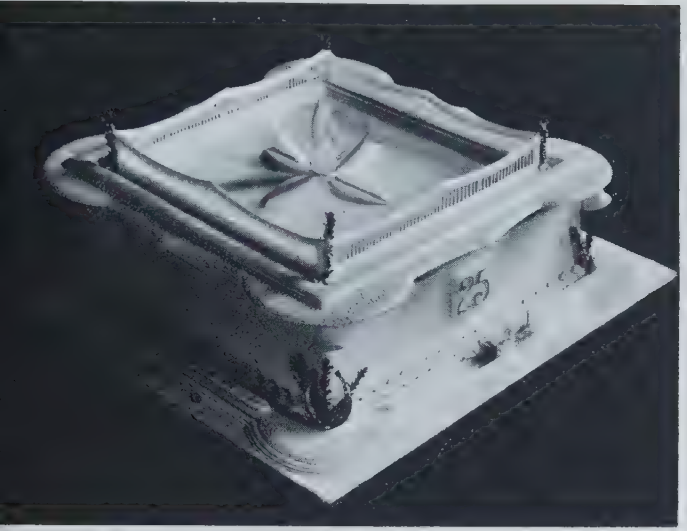


Fig. 13.3 *25th Wedding Anniversary Cake.*

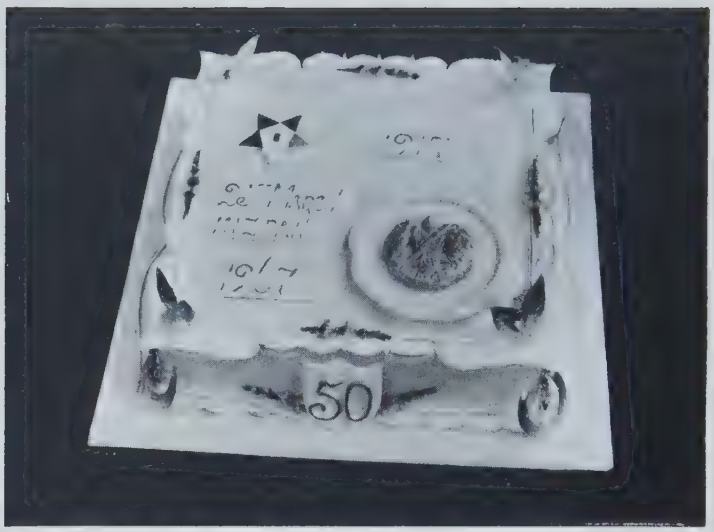


Fig. 13.4 *50th Golden Wedding Cake with Cameron Highlanders badge.*

The decorative borders are either in run-outs, and here the same design could be used as for the silver wedding, or can be a piped border with the circumference of the cake divided into sixteen sections and a progressive scroll border piped as illustrated. The one scroll gradually takes up two of the sections, one half above the line and one half below. Continue this border first with a star tube, and overpipe as shown. Graduated lines are then piped under each curve and in the same manner the curve is followed on top. The number **50** in figures is in the centre of a ring placed centrally, and this ring can be of scroll work in a filigree outline. The miniature finesse adds a daintiness and 'laciness' to the main theme. There is no set pattern for such work; it is a matter of creative ability plus artistic aptitude to evolve such delicate ornamentations.

Anniversary cakes

Various anniversaries are from time to time a point of interest and the occasion dictates the general design. As with the previous cakes the main theme can centre around a date or some other feature. Orders for engagement parties are not infrequent and the cake decorations as a rule are designed to include entwined hearts, names, or even initials. Apart from this they are on the same lines as a wedding cake.

Christening cakes

Christening cakes are always very much in demand and although a wedding cake is usually the accepted quality cake there are occasions when this is made from a birthday mix, and in some instances a sponge or lighter type of cake base has been requested. However, we shall deal with the wedding quality cake here, and this is mainly coated and iced, with a few of the wedding and silver decorations added.

A novel finish is by overpiping with blue for a boy and pink for a girl, or the name can be written on in the respective colour. If by chance a name is not required the cake may be inscribed CHRISTENING.

The cake decoration for the top is either in the form of a cradle or stork ornament but the decorator with a little ingenuity could make some very effective scenes with a piped stork. There are various methods of presentation but the two main ways are either with outline and soft run-in sugar or a direct piping on to the

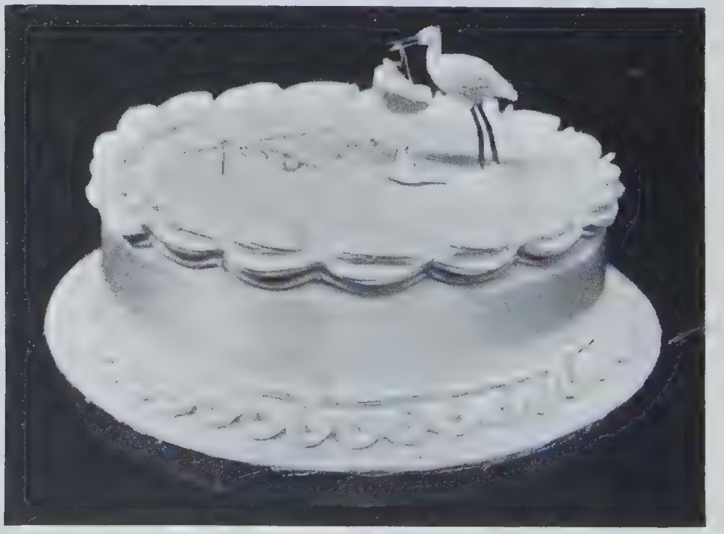


Fig. 13.5 *Close-up of border of Fig. 13.6.*

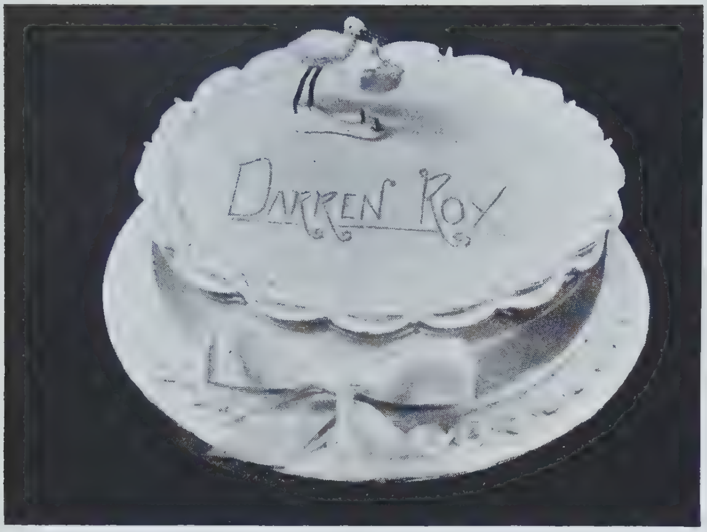


Fig. 13.6 *Commercial Christening Cake.*

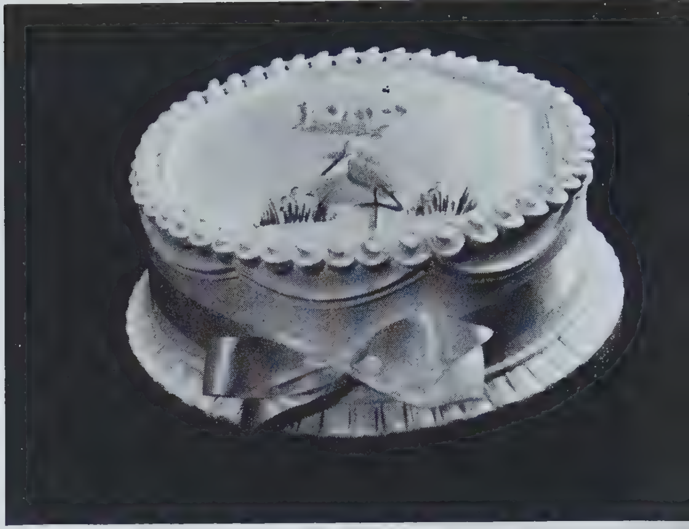


Fig. 13.7 *Christening Cake piped with stork.*

cake. The former method would show a much cleaner figure in the neck; the body would then be positioned prior to the legs being added although the tendency would be for it to look rather flat. With the second method, however, a much bolder figure could be made to stand out against the smooth coating of the background and with a little patience would be much quicker to pipe.

Use a No. 3 plain tube, commence by piping a shape similar to a figure **2** or reversed **S**. The body is then piped in three stages – first the top of the wing. Begin at the neck; as pressure is increased keep the point of the tube in the sugar, making the centre of the body bold and gradually decreasing the pressure to the tail. The under side of the body is done in a similar manner but is not so pronounced in the centre, finishing again at the underside of the tail. Then fill the centre, with the tube still impressed in the sugar, but during this operation the shape should take on a nice round appearance.

The head is then piped with a No. 2 tube: a good round bulb is followed with the beak at the correct angle, as shown. The legs can either be piped with a No. 2 in a straight line, into the water, making sure that the top of the leg is a little thicker and at a slight angle, or the stork could be piped standing with one leg in the water and the other crossed out of the water, making a sort of figure four.

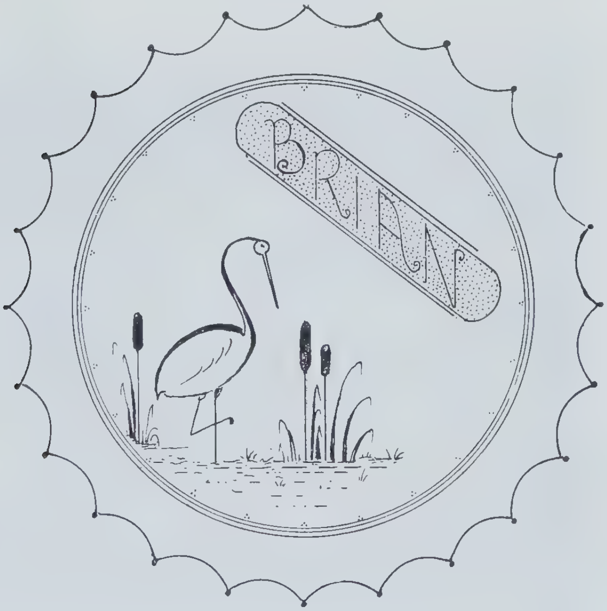


Fig. 13.8 *Drawing for Christening Cake.*

Once the outline is drawn on tracing paper the stork can be piped on to wax-paper by outlining and filling in with soft sugar. The outline drawing is able to be reversed so that the stork could be piped on either side of the cake. A little colouring is then added, brushing on a little french pink for the beak and legs. A spot of darker colour for the eye and just a tinge on the centre wings creates a much more effective stork. Always let the sugar dry before colouring, and beware of any slight indentations in the lines, for they will show up considerably.

We always associate a stork with bulrushes, reeds, and water. The level of the water is set by the length of the leg, which also determines the stem of the bulrushes, which are piped with a No. 1 tube. Then pipe the head with a No. 3. Be sure to obtain the right proportion in relation to the height of the stork. The bulrushes when dry are coloured darker chocolate for the head and a light shade for the stem. Reeds are either piped with a No. 1 tube or added with brush colour, and finally a few brush marks in blue for the water.

Some thought should be given to the positioning of the stork in relation to the area of the cake top so as to obtain the best effect. The most suitable place is to one side in the lower part of the top section. The name can then be set either above or perpendicular to the stork on the opposite side. The border of the cake is treated much the same as in a wedding cake but by making a run-out ring, the edge of which is made of thirty-two convex curves and a piped dot at the point of each curve, a very usual yet effective border is produced.

Special wedding cakes

Special weddings are intended to cover all types of larger sized cakes with special requirements, as illustrated in Fig. 12.12, (p. 63). The design was by special arrangement to be coupled with the badges of the two universities and the bride and bridegroom's initials. The cake was made in sections, two shallower cakes layered together for each tier, with a thin layer of almond paste round the sides which helps considerably in maintaining the correct size for each panel.

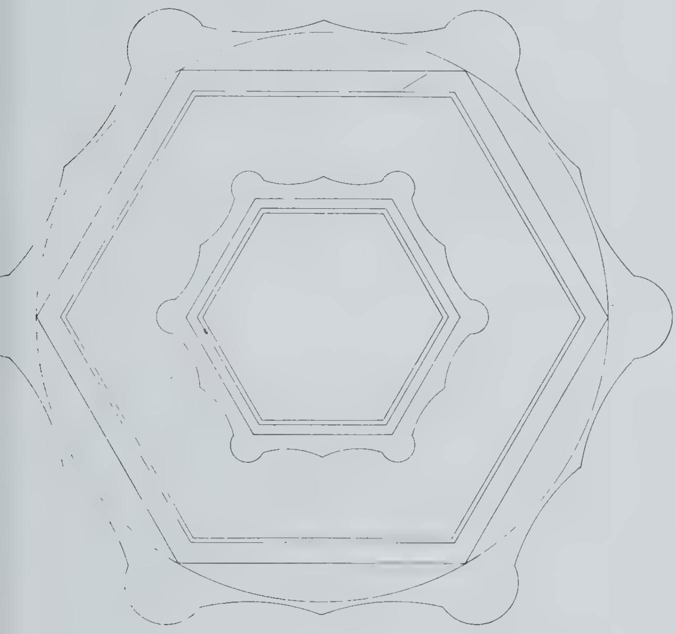


Fig. 13.9 *Special cake design.*

The design was drawn in such a manner as to illustrate how the various sections were piped and the ease with which it was assembled. In looking at the drawing on the base and middle tier you will notice a circle; this has been included primarily to show how the correctness of the points of the six-sided run-out is defined to be superimposed on the top of the base run-out.

The small panel in soft sugar, 5 ins. in length, will be fixed in an upright position against the inner line which is $5\frac{1}{2}$ ins. in length, thus allowing a small gap for the spray to be secured. The side panels were $5\frac{3}{4}$ ins. in the base tier, which left between each two panels a $\frac{1}{4}$ in. on which the small panel piece was fixed.

The plaque for the initials followed the design of the inside of each panel and the letters were very delicately tinted. The sugar work on the middle and top tier formed the same pattern, and badges were set at the front of the cake directly facing the bride and bridegroom.

PANELS

With all special wedding cakes the panel is set aside for the inclusion of any request, but as an alternative it is as well to design something such as a miniature floral spray to alleviate the plainness.

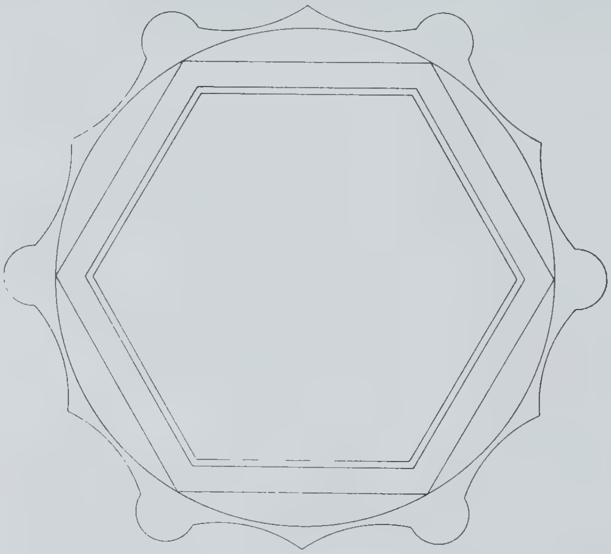


Fig. 13.10 *Special cake design.*

Immediately, then, one thinks in terms of sugar – a composition of dots with either a No. 0 or 00 tube – six dots representing flower petals, a dot for the centre with a finer dotted spray between each, graduated into a festoon finished with a miniature bow at each end. Delicate patterns introducing a little colour help in making the cake look more exquisite.

Piped heather may be employed in the same way, either in a panel or at a set point on the side of the cake.

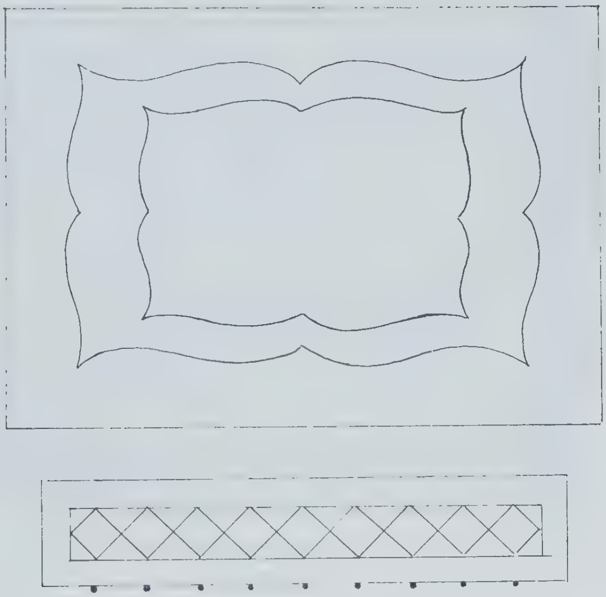


Fig. 13.11 *Panels.*

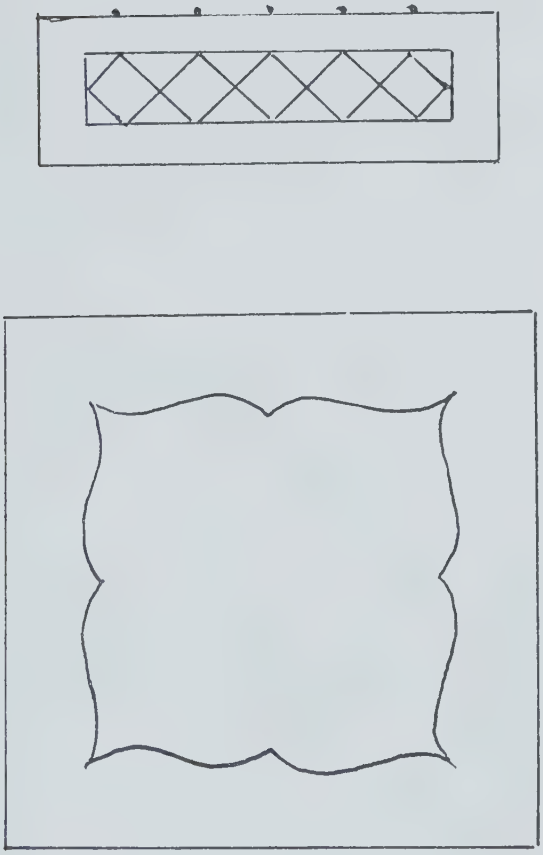


Fig. 13.12 *Panels.*

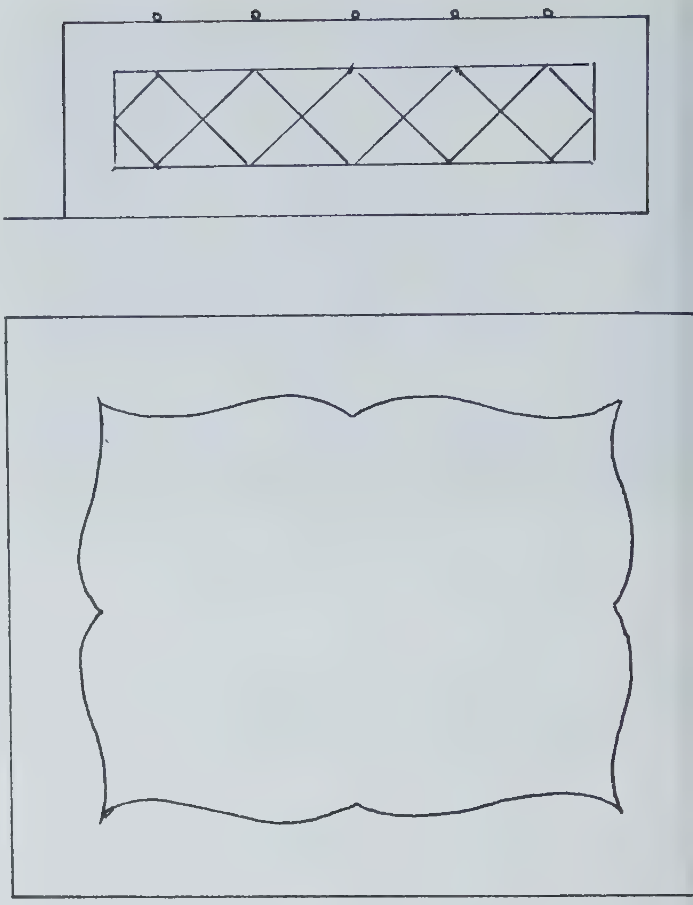


Fig. 13.13 *Panels.*

The stems in very pale green with a touch of colour in the flower dots are again clustered together and tied with a neat sugar bow. Such items require little time, and with practice can be piped directly on the cake.

As we have shown the way in which dots are effectively used in pattern form or to give a little delicacy, similarly a No. 0 or 00 tube is used for what we may term higgledy piggledy work, a continuous meandering line. Small panels may be filled in to give a background or this type of work used to good effect sectionally on the run-out.

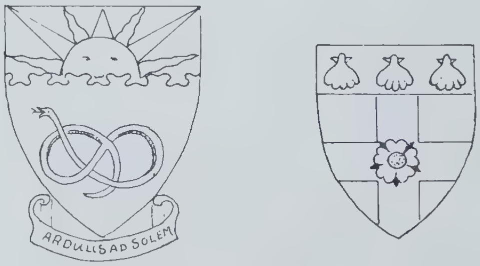


Fig. 13.14 *Badges.*

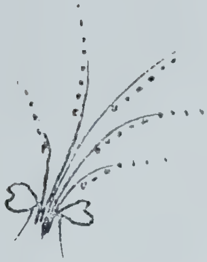


Fig. 13.15 *Heather motif.*

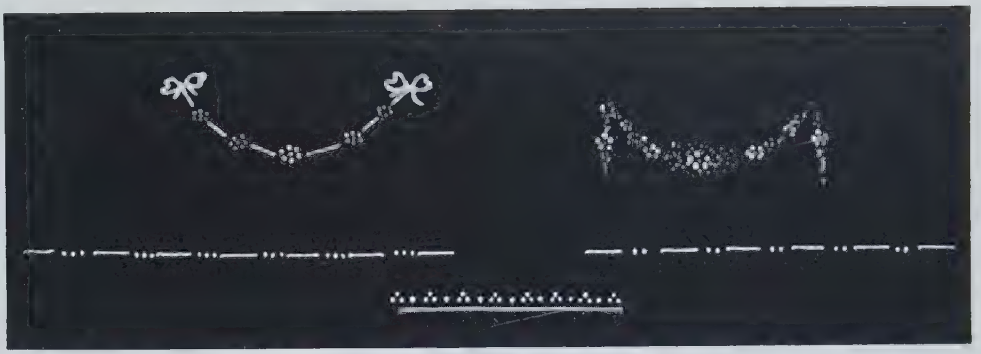


Fig. 13.17 *Panel motifs.*

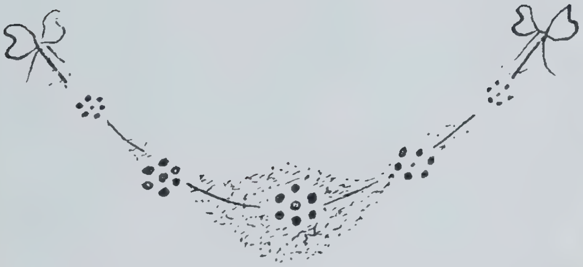


Fig. 13.16 *Panel spray.*

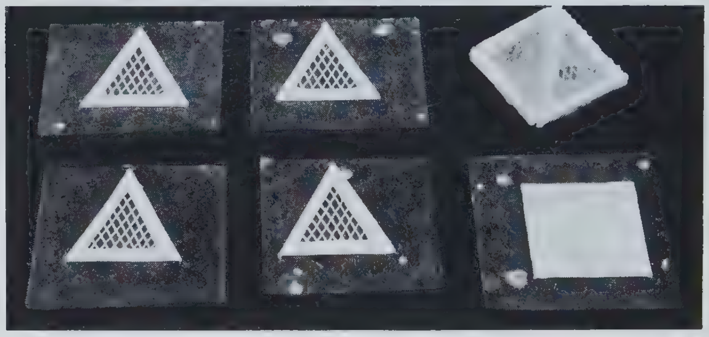


Fig. 13.18 *Piped belfry.*

With practice and a little thought you will be surprised how the work itself will improve the general layout.

Net work

The inclusion of net work for the borders of a wedding cake was always a most intricate job and very tedious in its execution – so much so that today it has been ruled out of commercial artistry. However, from a student's point of view, it supplies a means of encouraging efficiency, and it is with this in mind that reference is made to it here. The main difficulty is to achieve a nice rounded appearance throughout its build-up, and unless the base is formed correctly, as with other piping any faults only tend to be accentuated.

It was usual to commence with a No. 4 tube, piping from left to right over a small oval star piping, then follow the reverse way with a No. 3. In this way the net work gradually builds up and through these stages it is essential to keep the shape as regular as possible, even to the commencement and finish of each line. This means that the same repetitive procedure is carried out at least with four piping tubes.

One way of reducing this work is to pipe with a star tube a much longer elongated shape to commence with, and providing the shape is carefully graduated, the net work is then completed with only two tubes, though to get the full benefit, the lines must be piped as close together as possible. The shape is then outlined on the top of the cake and the sides to give a good finish.

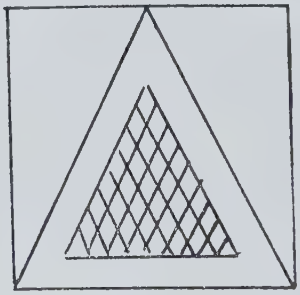


Fig. 13.19 *Belfry drawing.*

Net work is very useful for the formulation of various patterns in our modern designing with soft sugar, as seen at the various exhibitions, and although not quite so tedious it nevertheless requires accurate concentration. A good deal of practice can be had by piping on to wax-paper various net designs and enclosing them in a border of run-out sugar. These shapes are peeled off when dry and assembled to form a patterned border.

MAKING A BELFRY

The same principle is applied to the making of a belfry. Although a good deal of time is needed, they produce a very effective finish; for example if a $1\frac{1}{2}$-in. square is drawn, and a triangle within the square, using the one side as the base. Next draw a border inside the

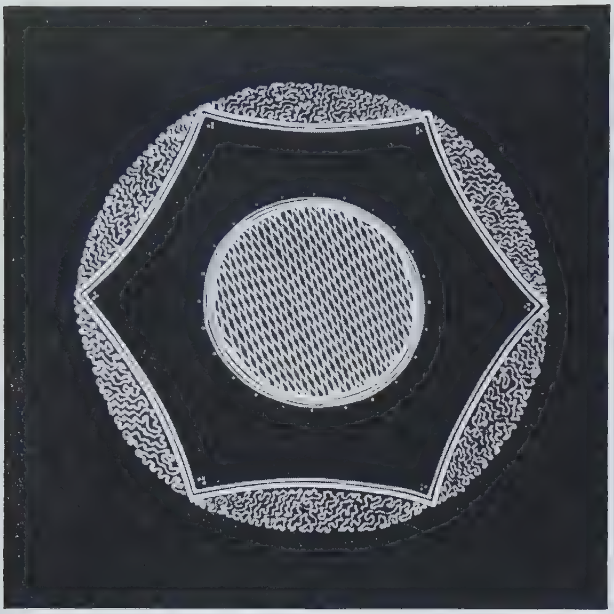


Fig. 13.20 *Net work.*

triangle $\frac{3}{16}$ in. in width. The centre is then piped with a No. 0 tube and the outer border in run-out sugar. Four of these pieces are placed upright upon the sugar base, the points of all four secured in the centre. Usually in a very large cake we divide into six and at each point place a completed belfry, further improved if a silver bell is suspended from the underside.

A six-sided belfry is also very attractive, although more time is needed. First draw the six-sided base and from one side design the triangle. This need not be square, for if the base is smaller and the belfry made taller the height will give the size of rectangle in which to draw the triangle.

Commercial wedding cake

In designing a three-tier square wedding cake for present-day commercial needs it is essential that this is reviewed in conjunction with present-day costs. The decoration of such a cake, depending on the skill of the decorator, can be quite a costly piece of work, and usually one looks at the prestige point of view and its advertisement value for bringing further trade and building up reputation. In this sphere there is a very varied and diverse type of labour so that really no set standard can be applied. But in order to help anyone to reckon his cost it is proposed to set out the various times it takes to complete a three-tier from beginning to end. By setting a time for each operation which is well within the scope of the decorator it should be possible to do your own particular costing – that which in your own instance is applicable to you at present-day rates, or any alteration of rates of pay in the future.

DESIGN AND PREPARATION

The design chosen has run-out sections partly coupled with a limited amount of piping which, if desired, can be extended to give a little more finish. However, sufficient has been piped on the cake to make this a commercial yet effective proposition. This particular cake was iced and piped by a female operator who had done this work for a number of years without any technical school training, and one would term her of good average commercial standard. The operational time is for the actual time involved for each section, and does not take into account the time needed to set aside for drying. This time will be occupied in other directions. Also the three cakes will be completed in conjunction with each other, not all as separate items. In the piping and decoration, each particular item is fixed on each of the three cakes set upon their own turntables of the same height. With this method there is no unnecessary lifting, and each operation is able to be carried out more speedily.

To begin with, the three cakes are unwrapped and the liners on the sides and base are removed. Almond paste is taken as ready prepared and the correct amount weighed for each cake, the top of each dressed with neutral jelly to secure.

The paste is rolled out for each cake and secured by means of a scraper to give a square side and the time allowed for this operation is 10 minutes.

The placing on suitable base boards and icing the top and sides of each cake, removing any surplus sugar from the board will require 10 minutes.

This now requires a drying period which must be left to the individual.

Before the second coat is applied, any blemishes on the first coat should be removed or rectified. Next ice the

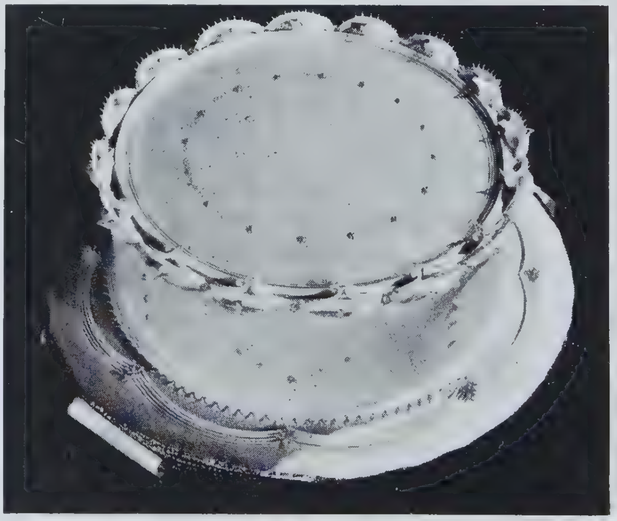


Fig. 13.21 *Exhibition Commercial Cake. All piping direct no cake.*

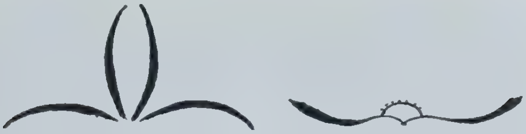


Fig. 13.22 *Designs for petals.*

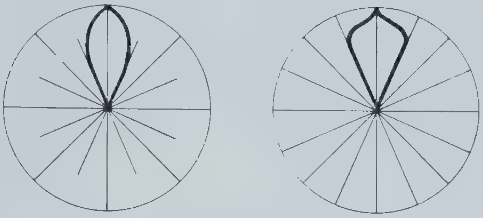


Fig. 13.23 *Floral cut piece.*

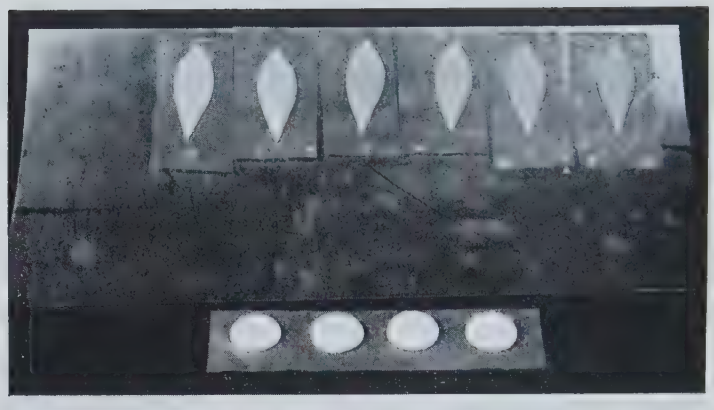


Fig. 13.24 *How the petals are assembled.*

top and sides with the second coat and keep the base boards clean and neat for which a further time of 10 minutes is allowed. Again set aside to dry.

Remove any marks to maintain as smooth a surface as possible, then continue to apply the final coating of soft sugar, after which the cakes are set aside to dry.

No time has been allowed in this instance for the cutting of the wedge.

The run-out corners again have previously been drawn to a standard design and are piped with a No. 1 tube and filled with soft sugar. The preparation of the twelve corners will require 12 minutes and these can be made and dried at the same time as the last coating or made previously and held in readiness for any given occasion.

TIME AND COST ANALYSIS

The cakes are now set up to commence the decoration and in every instance the sugar for both coating and piping has been prepared beforehand. First the corners are peeled from the wax-paper and fixed into position on each cake, adding sufficient sugar to the underside to fill any minor gap between the run-out and the cake top. Now remove any surplus sugar as neatly as possible to give a nice square edge. The time allocated to this operation is 6 minutes.

Secondly pipe a line with a No. 3 tube between each of the corners to form a margin for the star-shaped border. Follow this line on the inside around the whole of the inner square with a No. 2 tube – operational time 5 minutes.

Next pipe with a No. 1 tube a scalloped border inside the square piped with the No. 2 tube, and at each point pipe a small dot, and then overpipe the No. 3 line with the No. 1, repeated on all three cakes – operational time 6 minutes.

With a medium-fine star tube, pipe the top border with four scallops between the run-out pieces to complete the border, then proceed to pipe the same continuous border on the base of each cake – operational time 7 minutes.

Now overpipe the star borders with a No. 3 and No. 1 tube to give a rope effect and underline the sides with the same tubes – operational time 9 minutes.

Repeat this on the base borders and continue by piping a line on the base board to curve outwards at each corner, and finish with a series of small evenly spaced dots – operational time 20 minutes.

A line is then piped immediately above the star border on each side of the cake, and overpiped with

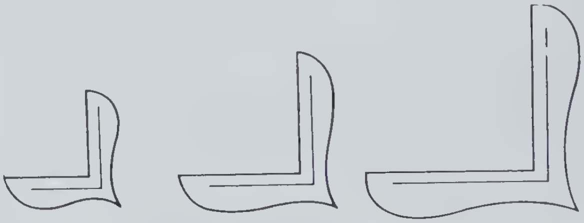


Fig. 13.25 *Run-out corners drawing.*

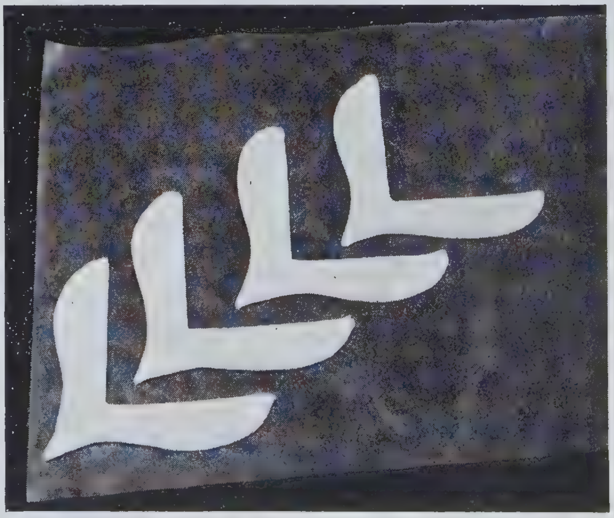
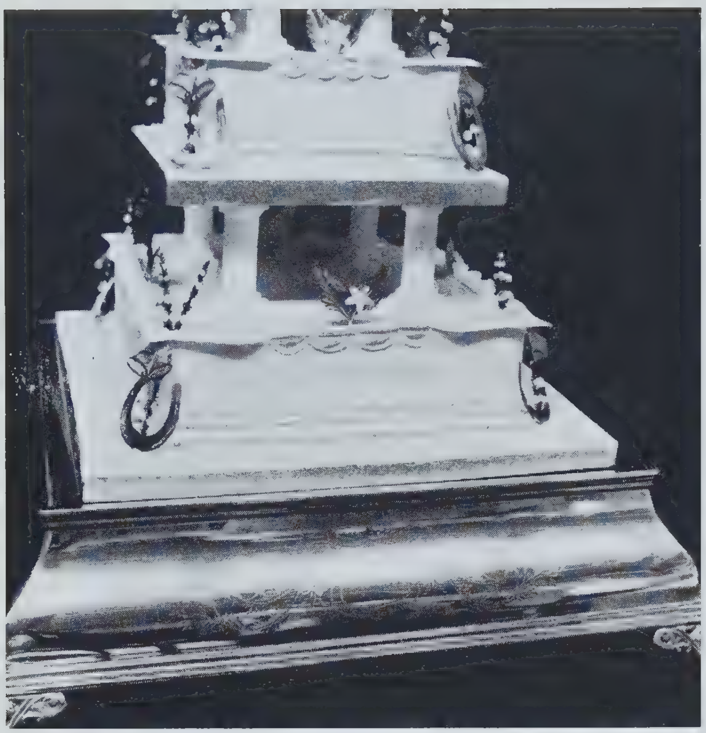


Fig. 13.26 *Sugar run-out corners.*



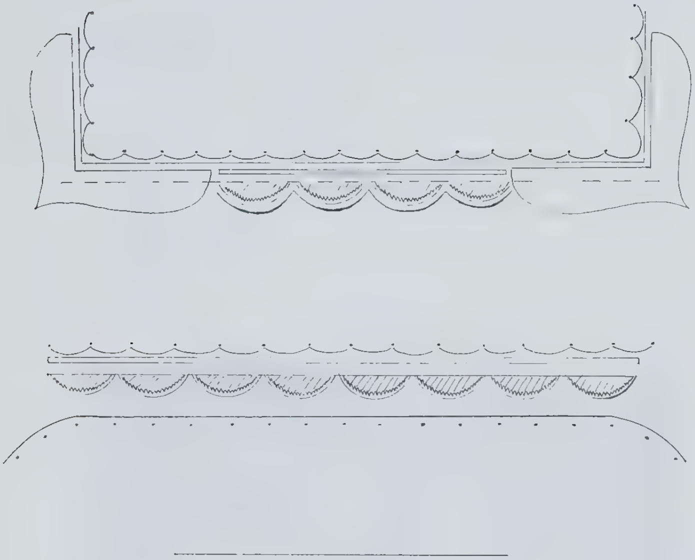


Fig. 13.27 *Close up base tier.*

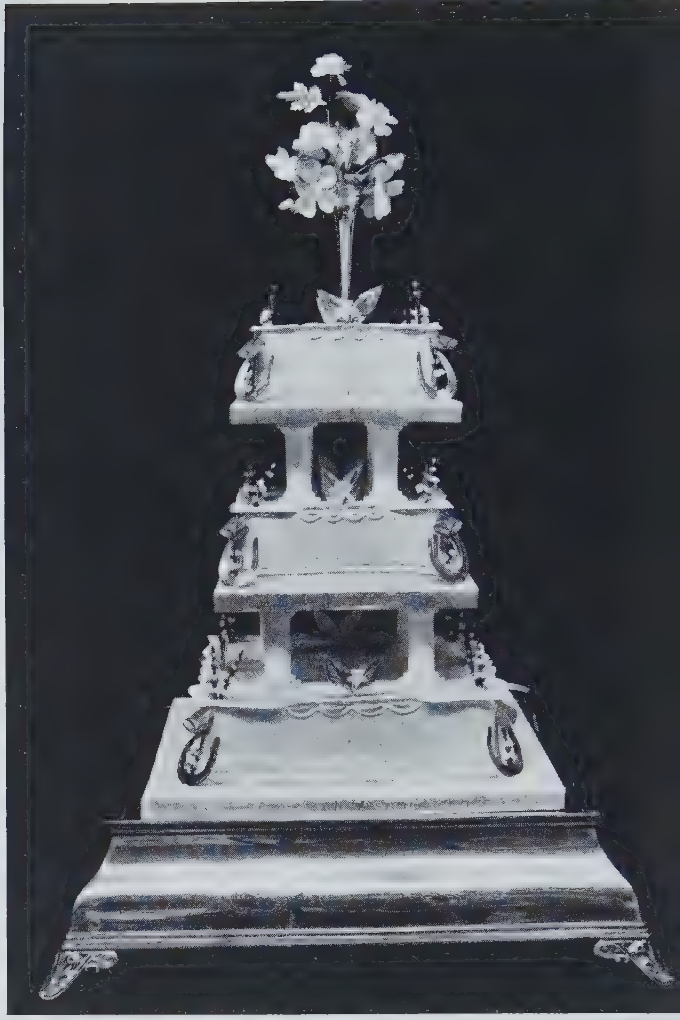


Fig. 13.28 *Completed cake.*

No. 1, followed by the same scalloped edge as on the top, and on each point place a small dot of sugar – operational time 7 minutes.

This completes the piping and no time allowance has been allocated for such things as initials, plaques, or any customer preference. All such items must be taken into account if a standard time is being set against a particular design. The decorations are now set in place and again have been kept to a minimum both in quantity and price.

Base and second tiers have two pieces of heather on the top corner and one piece with large horseshoes at the base. Twin paper or metal bells are fixed under the run-out on each corner. Four sprays of waxed flowers with silver leaves and a little asparagus fern are placed in the centre of each side. The sugar is pierced so that the spray will keep upright. On the third tier only a single heather is placed at each corner.

Therefore, to complete the decoration, we use thirty-two pieces of heather, twelve sprays, twelve horseshoes, and twelve twin bells – a total cost of 13s. 6d. Cake boards 14 ins., 10 ins., 8 ins. – cost 4s. 3d. Operational time 15 minutes.

Also supplied with the cake, within the price, were eight plaster pillars and a small top ornament.

14 *Heraldry*

Heraldry is a very fascinating study, of considerable range and complexity, and can be described as the art or science of armorial bearings.

In medieval times heralds were officers who transmitted public proclamations and functioned at tournaments. Today the College of Heralds records and blazons coats of arms and regulates matters of state etiquette and ceremonial. Historically we think of the Middle Ages as a land of castles, monasteries, pilgrims, and knights in armour, and conjure up such scenes as Richard I with his Crusaders, and the signing of Magna Carta at Runnymede. This colourful system of heraldic devices and symbols developed in England during the twelfth century and was first concerned with men of battle.

Because of the enveloping suits of armour used in those days and the consequent difficulty of recognizing individuals, symbols were painted on the shields, and the sight of these rallied the fighting men. Reputations were made, symbols became identifiable, and later a proud family possession passed from father to son in the same way that names do from one generation to another.

The shield is often termed coat of arms, because in the Middle Ages the designs or devices were embroidered on the tunic or surcoat. Through the generations, as families intermarried, the shields became more complicated. Even today it is possible to design and register one's own coat of arms, but the suitability of the applicant in respect of family relationships must first be established through research into lineage, regardless of financial position.

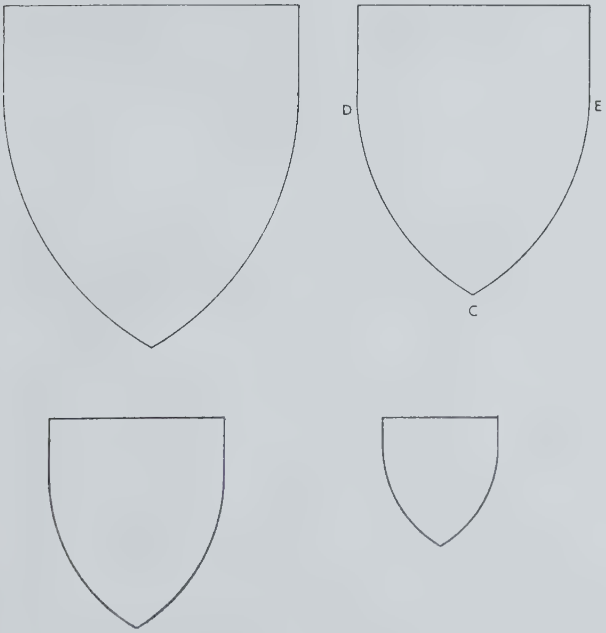


Fig. 14.2 *Drawing a shield.*

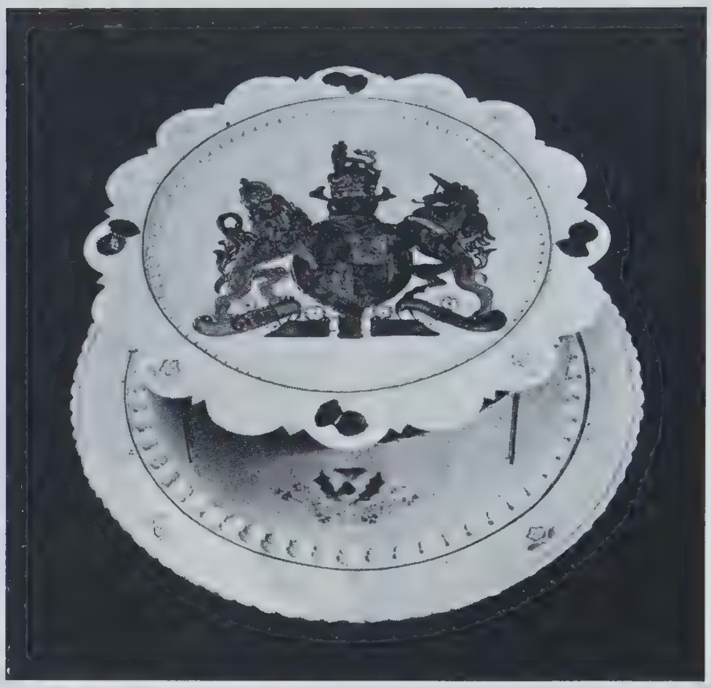


Fig. 14.1 *Iced Cake with Royal Insignia.*

In most towns we can see shields bearing armorial designs, for many commercial premises, banks, building societies, etc., exhibit this feature, and there are also county councils and local councils which display their arms. Similarly, when touring in the country, how many times have we not seen the arms of the squire or lord of the manor appearing as the sign of the local inn. Badges are also used in the military services. Most of these marks of identity are very old, whether they belong to royalty, county councils, or business concerns, and are all governed by the rules of heraldry.

Terminology

It is not intended to delve into the origins and development of heraldry, but rather to give an outline of its terminology, in case a request should be made for the inclusion of a device at some special function. If this request does occur, there are books at your library for reference, apart from the information that can be obtained from the family involved.

Heraldry is therefore a means of identification and is concerned with shields. Heraldic achievement is a

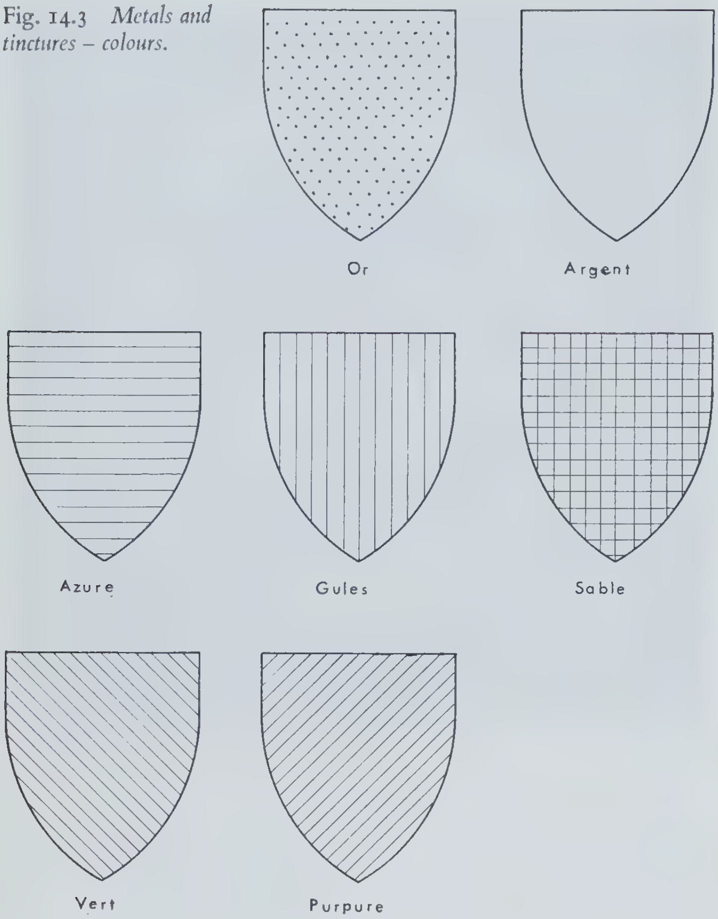


Fig. 14.3 *Metals and tinctures – colours.*

combination of several components of which the shield is one, with the helmet and crest, but if the shield has supporters, animals or figures on either side, these also form part of the achievement; the shield is the centre of the whole business, but the identification lies within the shield itself so that the person may be recognized irrespective of helmet, crest, mantling, coronets, or motto. The most interesting part is the formulation of the design, and the bright colouring used in it, and today this is borne out by the many different badges, even on blazers, which people are entitled to display.

Achievement is therefore the whole coat of arms – shield, helmet, crest. The shield or escutcheon, although based on the type used in past years, is not necessarily a standard shape, but should be so designed as to enable the heraldic device to be easily contained. The shield is the most important item for it carries the colours and charges (marks of identity) by which a person is recognizable.

Constructing a shield

Before proceeding further it would be well to demonstrate the construction of a shield. There are various ways of doing this, but one of the most straightforward is based on the diameter of the shield, for this must be of a size to suit and become part of whatever decoration the panel or side of the cake is to take.

First draw the diameter of the shield – be it 1 in., $1\frac{1}{4}$ ins., $1\frac{1}{2}$ ins., 2 ins., or $2\frac{1}{2}$ ins., and so on – and from the centre point draw a line vertically to below the base line. If, for instance, a base of $1\frac{1}{2}$ ins. is required, the vertical lines are also drawn from each of the outer points. Next decide the length of the shield at a point on the centre line C and with the compass describe an arc from this centre point to cut each of the vertical side lines $\frac{1}{2}$ in. below the base at D and E. Now place the compass point at the division of the arc and describe a further arc from the base C to point D. Reverse the compass point to D and describe the arc C to E.

The same method of procedure is carried out for various sizes, always remembering that the larger sizes require a greater depth in comparison with the depth of shield; similarly the smaller shield requires a lesser division from which the arcs are described. You will realize the importance of this feature for in a shield this division represents one-third of the total, drawn in with a horizontal line.

We are now equipped with the drawing of a shield or escutcheon and we can look at the terminology given to the colouring. Colours or tinctures used in heraldry are red, blue, black, green, and purple, while yellow or gold and white or silver are termed metals. The following terms are used to describe heraldic colouring and the colours are divided into two groups:

COLOURS

1. Metals or = gold or yellow
argent = silver or white
2. Tinctures gules = red
vert = green
sable = black
azure = blue
purpure = purple

Two other colours are sometimes used: tenne (mulberry) and sanguine (chestnut). As well as metals or tinctures a fur can be used, and although not intended to be real but a formal heraldic design, the two furs used are ermine and vair.

In heraldry ermine is shown as a white field covered with rows of black ermine spots as they are known, yet sometimes the colours are reversed, white ermine spots on a black field, and these spots are called ermines. Less common are erminois, black spots on a gold background. Vair was a much cheaper fur produced from squirrels. Blue and silver or white and blue represented the grey skins, illustrated by a wavy line. There is also counter vair in which the base joins base and point to point.

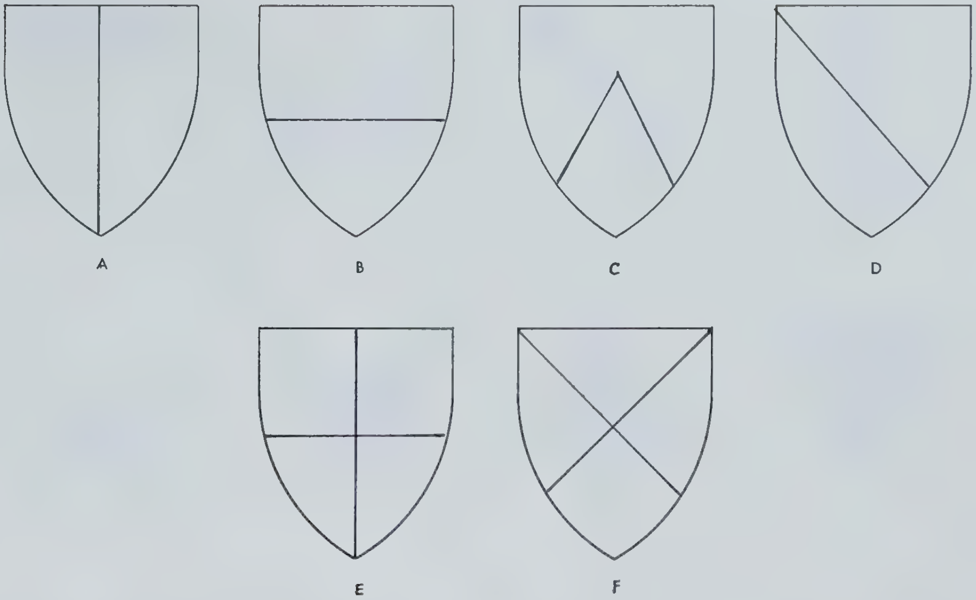


Fig. 14.4 *Party lines.*

The surface of the shield or escutcheon is known as the field, and the interpretation and affixing of arms or devices is known as blazoning and certain rules and terms are laid down to govern the depicting of such. The field is divided into various points to denote the exact position of the arms or charges. (See Fig. 14.5).

A is the Dexter side or right-hand side; B is the Sinister or left-hand side of the person holding the shield to protect himself.

POINTS OF ESCUTCHEON

C is called Chief
E = Dexter Chief H = Dexter Base
F = Middle Chief K = Middle Base
G = Sinister Chief J = Sinister Base
L = Honour Point
M = Fesse Point
N = Nombril Point

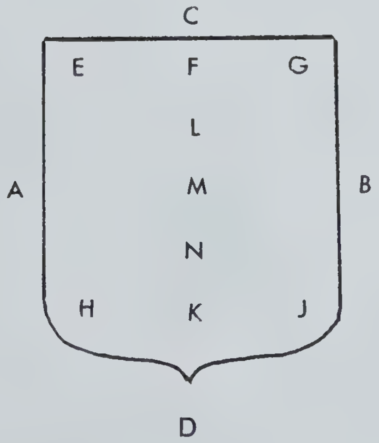


Fig. 14.5 *Points on the shield.*

The various parts of the shield are now illustrated. Three are in Chief E.F.G., three are in Base H.K.J. and the remaining three in Honour Point, Fesse Point, or Nombril Point.

Remember the right-hand side of the shield is the Dexter side and the left-hand side Sinister, always determined from behind the shield, and not to be confused with frontal viewing as these would then appear the opposite.

PARTY LINES

The shield is also divided into sections or into two colours which are then called Parted or Party lines, each having a special name denoting the direction:

per Pale per Bend Fesse
Cross Saltire Chevron

A = Party per Pale
The shield is divided in two vertically.

B = Party per Fesse
The shield is divided in two horizontally.

C = Party per Chevron
A division of the shield in the form of an upturned V, the highest point reaching the Chief.

D = Party per Bend
Divided diagonally from Dexter Chief to Sinister Base.
Bend Sinister
The shield is divided directionally the opposite way.

E = Per Cross
Is a combination of per Pale and per Fesse.

F = Party per Saltire
Dexter Chief to Sinister Base. Sinister Chief to Dexter Base through Fesse Point.

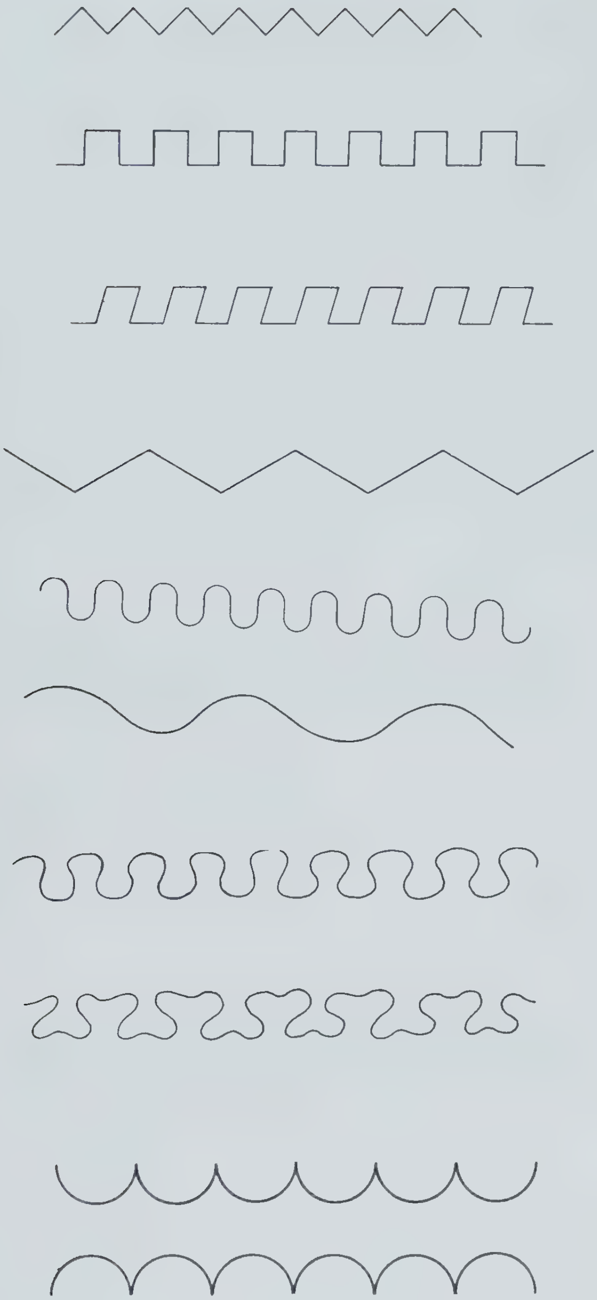


Fig. 14.6 *Party line variations.*

(Reading from top to bottom).

Indented.
Embattled.
Raguly.
Dancetty.
Wavy or Undy.
Nebuly.
Engrailed.
Invected.

Most of the party lines, although shown straight, can be varied in a number of ways which could add to the beauty of the shield, and some of the most common variations are illustrated:

Variations of Lines

Indented
Embattled
Raguly
Dancetty
Wavy or Undy
Nebuly
Engrailed
Invected

Everything that is put on a shield is known as a charge. Some of these are very old and have become essential by their frequent use, yet simple so as to form a common group known as ordinaries.

Ordinaries

Ordinaries again have their proportions controlled and from these the diminutives are arrived at:

A The Chief

White covers the top of the shield horizontally to an approximate depth of one-third. This will again be borne out by the construction of a shield.

B The Fesse

Two lines crossing the field horizontally through Fesse Point, and although virtually the same as Chief it covers the central portion of the shield to one-third and gives its name to anything that occupies a horizontal position. When divided by these horizontal lines it is termed Field Party by Fesse, i.e. the field is divided through the Fesse Point, or charges are referred to as Fessewise.

C The Bend

A Bend is again one-third the width of the shield which passes from Dexter Chief to Sinister Base. The diminutive of the bend is termed Bendlet or Gartes and is approximately half the width of bend. Sometimes bendlets are positioned towards the Chief instead of being centred on the Fesse Point. A further diminutive is Riband.

D Pale

A band between two perpendicular lines, again one-third the width of the shield, passing through the Fesse Point from Chief to base. A is Pallet, which is half the width of Pale.

E Chevron

A Chevron, briefly an upturned V form, is similar to the bar, its width approximately one-fifth of the shield height: the position of the point at Chief allows for the inclusion of other

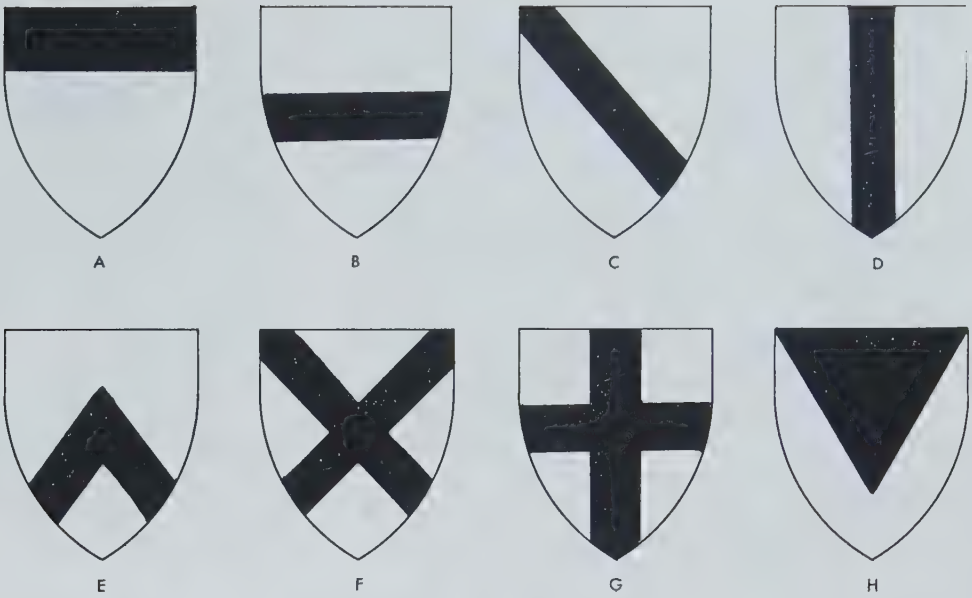


Fig. 14.7 *Ordinaries – A to H.*

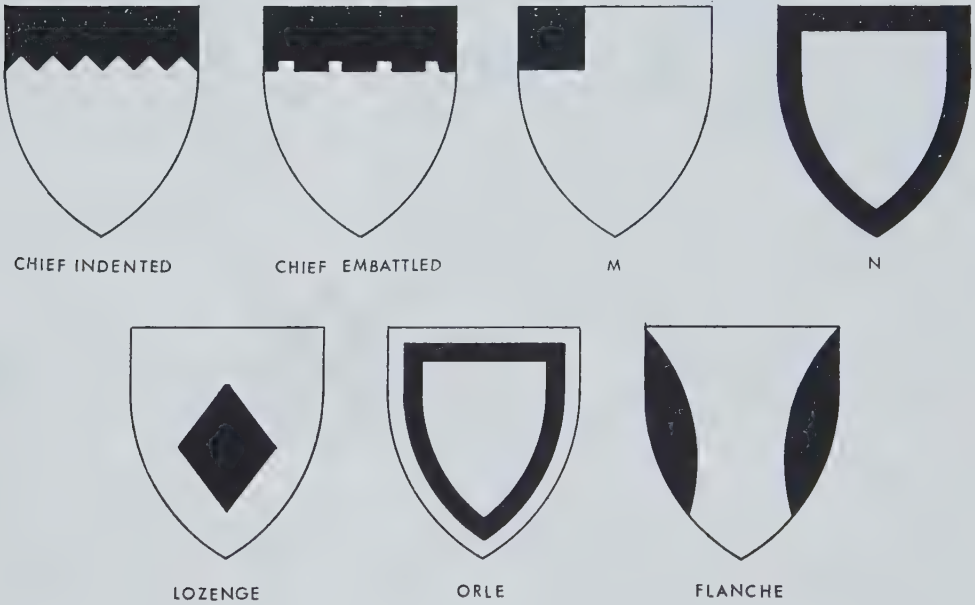


Fig. 14.8 *Sub-ordinaries.*

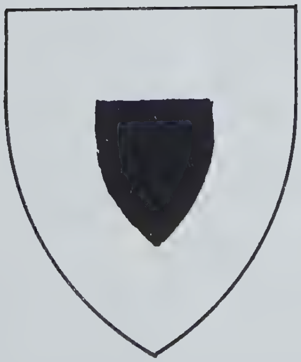


Fig. 14.9 *Inescutcheon.*

charges. The diminutive is Chevronel. So far all these ordinaries cross the field from side to side and, as previously explained, we have both diagonal and vertical party lines in the field to which some of the ordinaries correspond.

F The Saltire

This is formed diagonally by bend Dexter and bend Sinister crossing at Fesse Point.

G The Cross or Quarterly

The cross is a composite of Pale and Fesse, the width of the shield.

H Pile

A long wedge shape composed of lines from each end of the Chief extending to the Nombril Point.

J Bend Sinister

Two parallel lines, the opposite of Bend, running from Sinister Chief to Dexter Base; its half-width diminutive is Scarp, which further reduced with the ends cut off square or couped will give Baton.

M Canton

This is a small square in the Dexter corner of the Chief.

N Bordure

A border within the shield or a band around the edge of the shield. Both these ordinaries often carry other charges like Fleurs-de-lis, Billets, Roundels. In addition to ordinaries there are sub-ordinaries: Escutcheon, Orle, Tressure, Flanche, Lozenge, Mascle, Rustre, Fusil, Billet, Gyron, Fret, and Roundel.

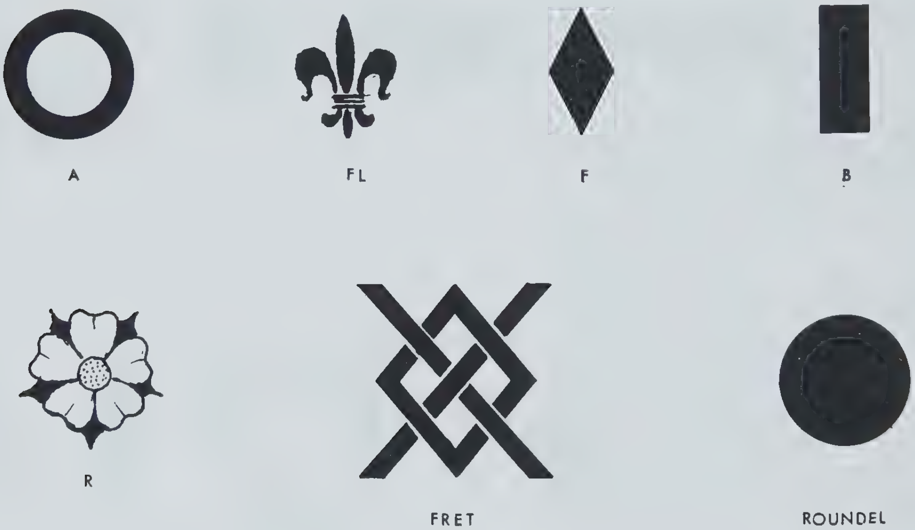


Fig. 14.10 *Sub-ordinaries: A Annulet, FL Fleur-de-lys, F. Fusil, B. Billet, R. Rose, Fret, Roundel.*

O The Inescutcheon

The Inescutcheon is a shield in the centre of a shield, on the Fesse Point one-fifth the width. In any other position it becomes a charge called Unescutcheon.

Sub-ordinaries

The *Orle* is simply a bordure which is inside the shield, instead of the outer edge.

A *Tressure* is similar to Orle, but much narrower, often ornamented with fleurs-de-lis.

Flanche is a circular cut-out on each side of the shield.

The *Lozenge*, *Mascle*, *Rustre*, and *Fusil* are grouped. Lozenge is a diamond, and when the field is covered it is said to be lozengy, always on two-coloured tinctures. The Mascle is a lozenge with the centre cut away leaving the field showing, while a Fusil is an elongated lozenge taller than its width. A Rustre is a lozenge with a circular hole in the centre through which the field shows.

A *Billet* is a small rectangular shape like a brick.

The *Gyron* is a segment triangularly drawn from the Dexter Chief to the centre of the shield.

Fret is a mascle with two ribands crossing it in Saltire interlaced. The Dexter bendlets pass over the Sinister bendlets.

Roundels

Roundels are round figures and occur under a variety of names according to their tincture. Should they be in metal they appear flat, and when in colour globular. Their colours and names are as follows:

Colour		Name
argent	is called a	Plate
or	is called a	Bezant
azure	is called a	Hurt
gules	is called a	Tort
vert	is called a	Pomme
sable	is called a	Pellet
purpure	is called a	Golpe

One more roundel, this time with wavy blue and white bars across it, is called Fountain.

A few of the ordinaries and sub-ordinaries can be used to cover the whole shield and also to form a field on which other charges may be placed.

A Field Paly is covered with vertical bars.

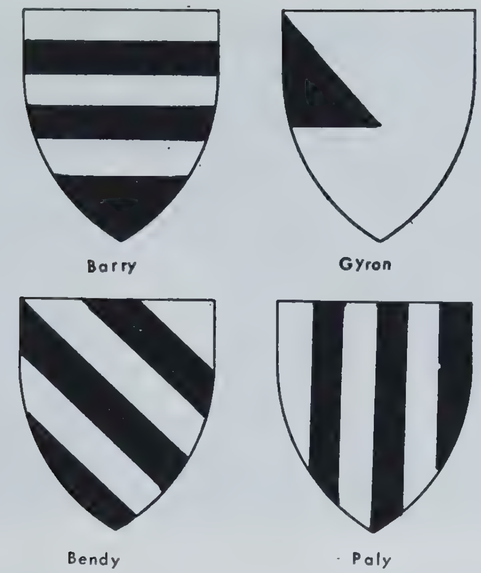


Fig. 14.11 *Ordinaries used as fields.*

A Field Barry is covered with horizontal bars.

A Field Bendy is covered with diagonal bars.

When a field is made of small squares it is termed checky and if criss-crossed with narrow interlacing bars it is termed fretty.

Charges are any form or figure on the shield or ordinary.

Charges

Throughout the years as more families used a coat of arms so the charges became more varied, so varied, in fact, that each falls into a form of classification. Perhaps one of the earliest and best known of the charges is the lion, not necessarily drawn true to life but in its heraldic form. Again, the lion is shown in various postures, each also being classified. If, for instance, the lion is seen in a standing position or on its hind legs with front paws raised, it is called rampant. Other positions are standing (statant), sitting sideways (sejant), sitting full face (sejant offronte), lying (couchant), and walking (passant), which only serves to indicate how vast and intricate one charge can be. Other wild animals frequently used are leopards, bears, elephants, and wolves.

Hunting is represented by dogs: foxhound, greyhound, spaniel, terrier. The foxhound was known as the 'Talbot' and is always shown with wide, drooping ears. Other animals include the stag or hart with branching antlers (known in heraldry as 'attires'); horses, cattle, goats; and sheep (suspended on a metal ring) representing a sheepskin or fleece, also the Holy Lamb. There are birds from the eagle, the king of birds, to the swallow, known in heraldry as a martlet. Long-legged birds such as cranes or herons are but a few of those in this family. The dolphin is the chief representative of the fish family (though not a true fish) but pike are also used. Then there are snakes, usually coiled in a figure of eight, and tortoises. Insects are not uncommon and the bee is an emblem of hard work. The human form, angels, monsters, dragons, etc., all come under the heading of Heraldic Zoo.

Among flowers, the heraldic rose is represented by the English wild variety. The Tudor rose, white or red, dates back to the Wars of the Roses.

The trefoil is fashioned as a three-leaved clover with stalk attached. With four petals it is quatrefoil, and with five is cinquefoil.

The fleur-de-lis is the heraldic symbol of the French kings.

Trees, the oak being the favourite, are shown together with oak leaves and acorns.

Fruits, such as oranges, apples, pears, cherries, and grapes, all have their place.

Crowns, coronets, flags and bunting come under their own headings in great variety and are used in many ways to denote station and lineage in our society.

Crosses and many other items far too numerous to mention at this stage are listed as charges, and the more one delves the more complicated heraldry becomes. Only the surface has been touched, just enough to give some idea of how to commence the drawing of a shield or complete a crest for inclusion in decorative work. It is intended primarily as an introduction to what could be a very interesting subject.

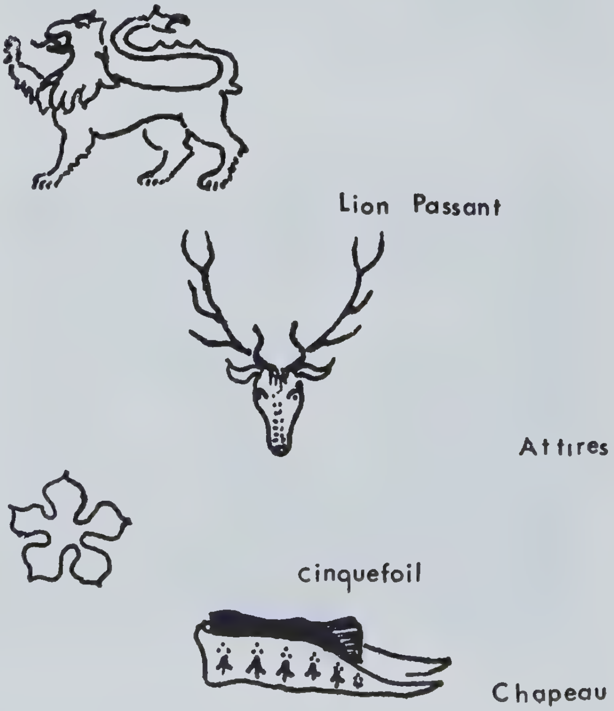


Fig. 14.12 *Charges.*

15 Gum Paste

ALTHOUGH in this new era gum paste is rarely used as an alternative decoration, it would perhaps be opportune to describe the medium and the art of using it, for in the past this was a skill in its own right quite apart from that of piping. Furthermore, in my experience of technical schools today, as distinct from the bakery schools, there seems to be renewed interest in any form of art and particularly in the sphere of sculpture and modelling which is the real basis of gum paste work. The standard of ornamental work was always very high though it sometimes tended to look clumsy; yet various types of patterns or border units could be more delicately contrived so as to be artistically superior.

The more delicate the ornamentation the more strength it needs, and this was given by affixing a strip of net to the moulded piece so that upon removal from the mould it would be quite taut when dry.

Its application

Most of this type of work was in relief only, but had always to be definite in its structure, clean and concise in line, which is essential where any type of mould is to be taken. Various ornaments lend themselves to this process but the details must always be well defined. However, much of this business has now passed to the manufacturers and a variety of ready-made vases and top decorations can be bought at a modest figure, as well as smaller individual pieces for applying around the borders to form a design. Moulded trellis work ideal for a top border and trellis corners in the shape of a cone all lend themselves to the inclusion of decorative floral sprays. Nevertheless, decorations of this kind, however neat, tend to give the cake a heavy or clumsy appearance and they can only be disposed of to the guests as mementoes, but the edibility of such a medium is to my mind questionable.

Gum paste has been used in the build-up of exhibition cakes, that is to say, the basis for the overhanging border was commenced on a gum paste base. In this respect it was admirable, for not only did it give strength and support to the finer work, but it allowed the piping to fall on a perfectly level surface so that the whole structure could be designed and executed by the drawing-board method. In fact it became so detailed that the execution of these exhibition dummies came within the category of precision work.

I have known the side of the dummies to be given a covering of gum paste and allowed to dry. This was a matter of speed for once the structure was dry and smoothed down it was not a long process to achieve the correct coating, but I personally prefer a build-up of sugar.

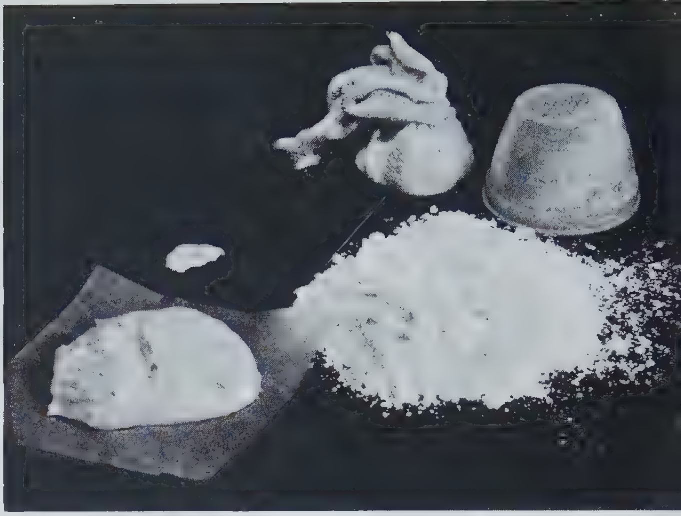


Fig. 15.1 *Materials for making gum paste.*

Any development of local interest could be designed, produced and displayed in this medium. A project can be made to scale sectionally and assembled when dry, with any final additions. This gives some idea of the extent to which the paste was used and seasonally it still has some advantages, but in all this type of work the underlying principles remain the same.

Making the paste

Gum paste is mainly a composition of gum tragacanth and icing sugar plus a little cornflour for dusting. Tragacanth is defined in the dictionary as a spicy Asiatic shrub producing a very fine gum, and it is this that is used to make the paste. In previous times gum was bought as a lumpy mass and the procedure was to put a small quantity into a glass vessel, cover it with water and leave it in a slightly warm cupboard for twenty-four hours, when it should be quite soft and soluble. This solution was stirred and strained through a muslin cloth for invariably there are impurities, after which it was added to the icing sugar and made into a nice pliable paste. In those days considerable quantities were used, but today only small quantities are required which can be made more easily, since gum tragacanth can now be obtained as a very fine white powder, much simpler to use.

While there is no set recipe for the making of gum paste, the best method is first to put well-beaten icing sugar mixture into a 1 lb. basin, three-quarters filling it. Add to this sufficient powdered tragacanth to cover a

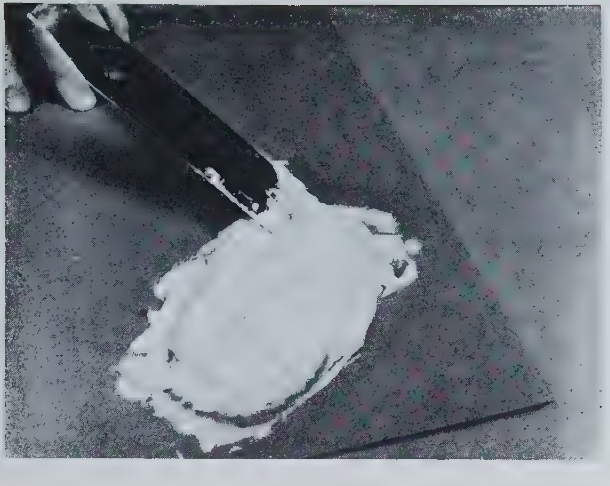


Fig. 15.2 *Mixing the sugar and gum.*

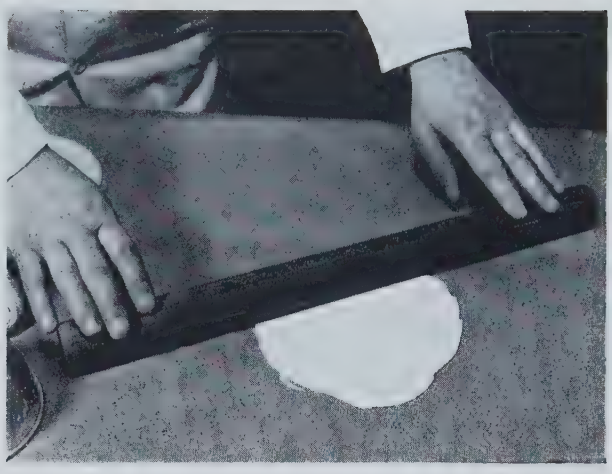


Fig. 15.3 *Rolling out gum paste.*

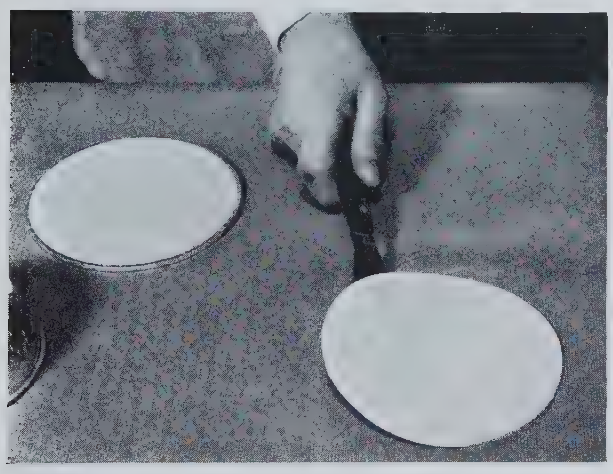


Fig. 15.4 *Free underside.*

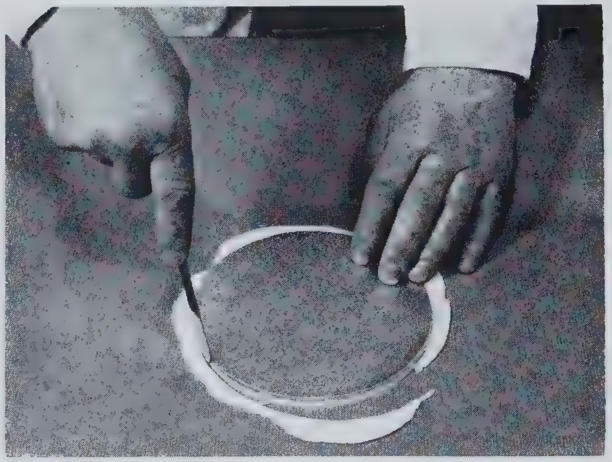


Fig. 15.5 *Cut out with template.*

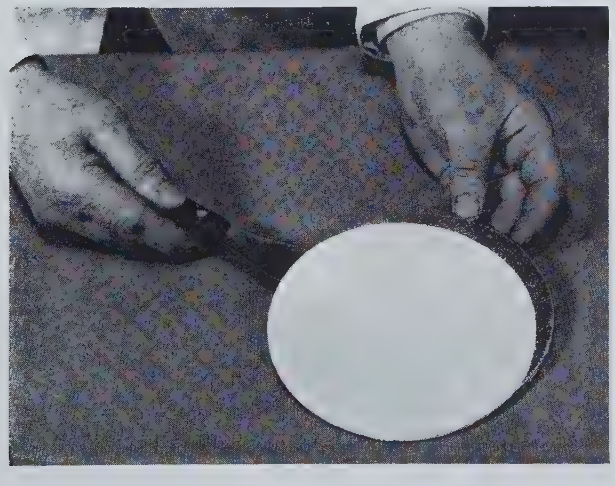


Fig. 15.6 *Transfer of cut out.*

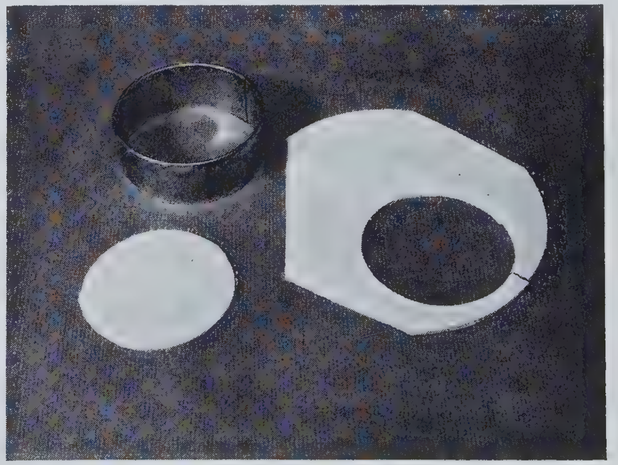


Fig. 15.7 *Cut out plaques.*

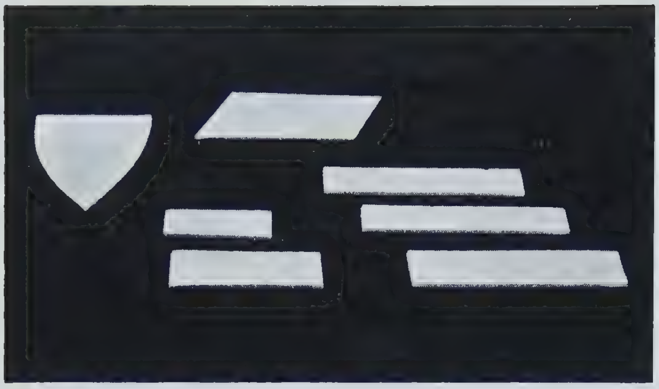


Fig. 15.8 *Shaped plaques.*

half-penny and proceed to work it well into the beaten sugar. A little added liquid blue will give a whiter paste (be sure to match).

Correct Consistency

The strength of the paste will be shown by the elasticity of this sugar, and when well mixed turn it on to a marble slab or similar surface and mould it into a good firm paste with the addition of sieved icing sugar, keeping the slab scraped clean throughout. A little experience will soon determine the consistency, for if too soft it will tend to be slightly on the sticky side for moulding, and the consistency should be such that it takes on the shape of the mould and yet skins sufficiently to come away cleanly.

To obtain a good smooth surface always finish the final moulding with a dusting of cornflour, which for this work should be contained in a double muslin bag. This allows enough to be extruded, and fine enough, to give that evenness to the finished surface.

The paste when made should be kept covered in a jar or container or on the table covered with a basin with a slightly damp cloth round the edge. One cannot over-emphasize the need to be scrupulously clean during this operation, for the least speck will show sufficiently to mar the work. Gum paste easily skins over so it is advisable only to take sufficient from the container for immediate use, and any cuttings should be returned to the container as quickly as possible and so be kept in good working condition.

Cut-outs

One of the first exercises is the cutting of shapes, such as a circular plaque or a shield, and for these the paste is rolled out to approximately one-sixteenth of an inch in thickness, keeping it lightly and evenly dusted and from time to time lifting it during rolling to be sure the under surface is just as free. This provides two surfaces from which to choose. A certain amount of pressure is given during the rolling stage, and when ready just rub the palm of the hand over the paste, for a little friction creates a much smoother surface.

Having now obtained the required thickness and freed the underside, cut out the shapes with a sharp-pointed knife and a template. Cutters may also be employed but a knife seems to give a cleaner and squarer edge. The next stage is to remove all cuttings back to the containers, leaving the cut-out pieces on the table. The pieces are now carefully transferred on to a perfectly flat surface lightly dusted with cornflour, and allowed to dry. All types of plaques are produced in this way, circular ones being put into a medallion mould to give a curved surface, rectangular, square, and even name plates 3 in. × $\frac{1}{2}$ in. being cut with a sharp knife. Take care not to destroy the corners. Always transfer to a dusted surface and set away to dry. Store in a dry place and use as required. As time elapses the pieces become quite brittle and have a similar ring to china. The smoothness of the surface readily takes on any type of colouring should this be desired.

Moulded work

The more intricate forms of this work are made with the use of moulds. A knowledge of sculpture is required to produce something in relief, and it was once part of the decorator's craft to do this type of work by first modelling the subject in plasticine or wax. Once the modelling was complete a frame of modelling paste, 1–2 ins. according to depth and $\frac{1}{2}$ in. thick, was placed round giving a clearance of approximately $\frac{1}{2}$–1 in. depending on the size of the subject being modelled.

Making the Moulds

Plaster of Paris can be used to make the mould, but a good dental plaster is much finer and easily obtainable. Sufficient plaster is placed in a basin and water added and stirred to make a nice thick creamy consistency. As it begins to thicken pour it over the moulding, mak-

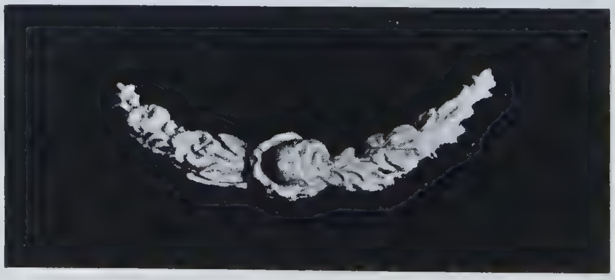


Fig. 15.9 *Model in plasticine.*

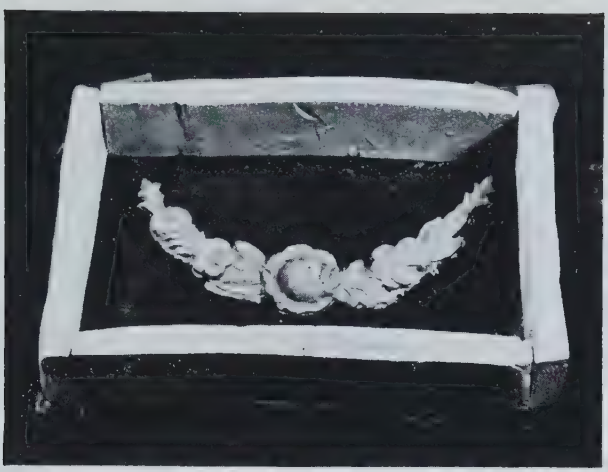


Fig. 15.10 *Wall or frame for moulding.*

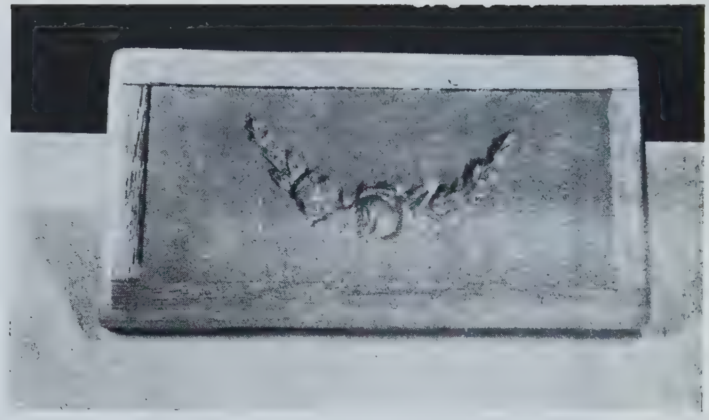


Fig. 15.12 *Fibre-glass mould.*

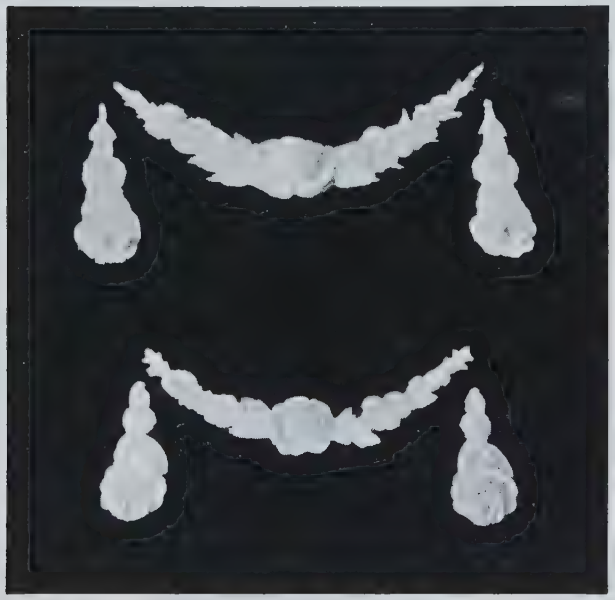


Fig. 15.11 *Examples of moulded gum paste.*

ing sure the plaster totally covers the relief work, then continue to fill the whole section in. Once the plaster commences to set the work must be speedily carried out. The mould is now left to dry out, when the wall of plasticine is removed and the subject is extracted from the mould. The mould is then left a day or two to dry out thoroughly.

There are new resins on the market and a fibre-glass powder that when mixed with a catalyst sets very quickly, and is very hard and durable. One point here: the model to be moulded should be placed on a piece of plastic then framed with wood lined with plastic to enable the mould to be easily released. This substance will also take the shine from the plastic, but it may prove rather expensive for our needs. If a good deal of moulding is to be done then it would be worth while investigating.

The making of moulds has to some extent been replaced by our manufacturers for it is now possible to buy certain types carved in wood, and although standard in design they are more useful.

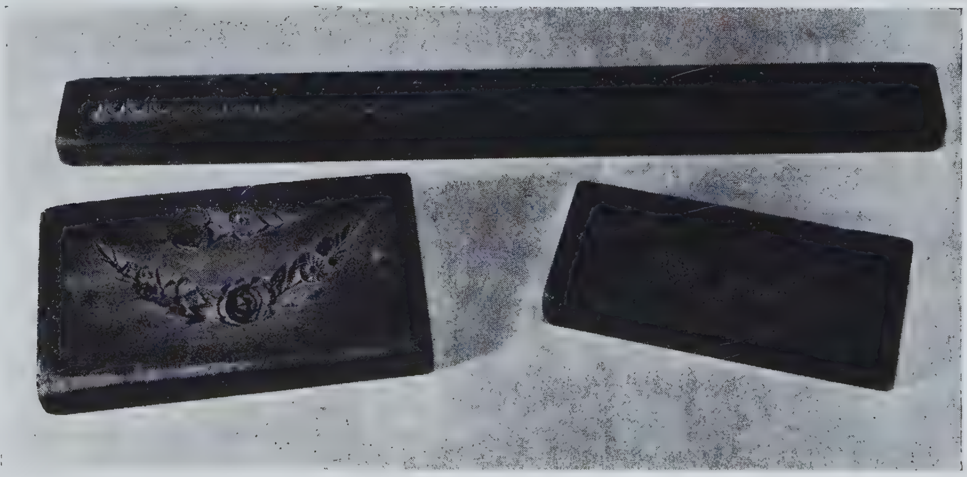


Fig. 15.13 *Carved wooden mould.*

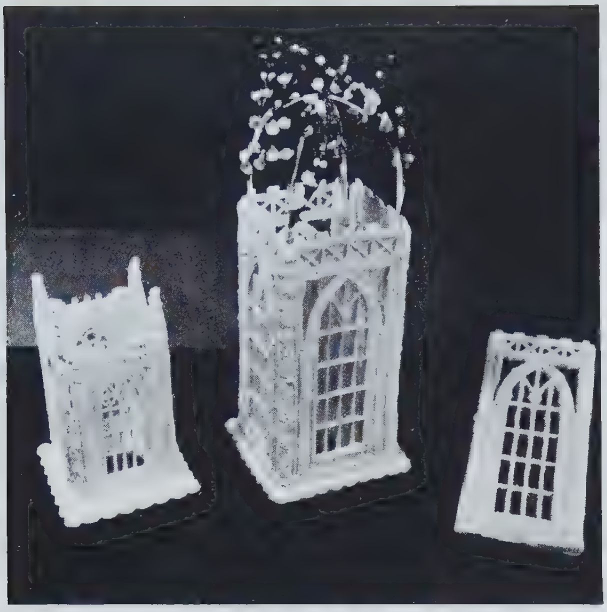


Fig. 15.14 *Church tower, sectional moulding.*

Moulding the Paste

The method of moulding remains the same. Give the mould a light dusting then take sufficient gum paste to well fill the mould but make it into a nice pliable consistency first. Press gently to ensure that the paste reaches all corners of the mould, then with a sharp knife cut away the surplus paste, taking care not to distort the shape. Once again level the top and turn out on to a dusted surface by gently tapping the reversed mould. The piece should come away quite easily with a good firm impression and immediately be fixed into position on the cake by moistening the back with a little white of egg. Some of these mouldings are dried on curved surfaces to fit into a particular decoration, but this depends upon what is required.

The ornamentation of church towers is moulded in sections, each being supported with white netting secured to the paste before it is released from the mould, and then assembled together when dry.

In this chapter the intention has been to give an outline of this work for those who are interested, particularly those with an interest in modelling which falls in line with the school curriculum. However, soft-sugar work has replaced many of the earlier practices, and is speedier with a much cleaner look.

In the same way, ornaments (cupids etc.), have moved away from plaster and gum paste and many are now being produced from plastics. These are stronger and more durable, not affected by atmospheric conditions nor easily damaged. Colour is not so white, but many such plastic ornaments are now made with a chrome finish and look very attractive.

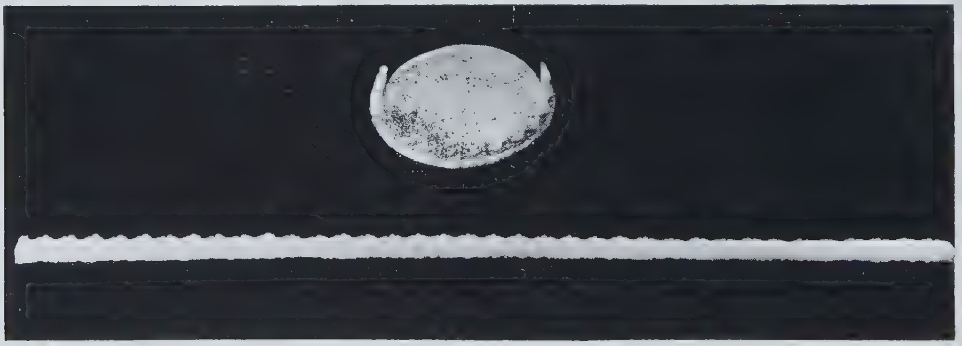


Fig. 15.15 *Borders.*

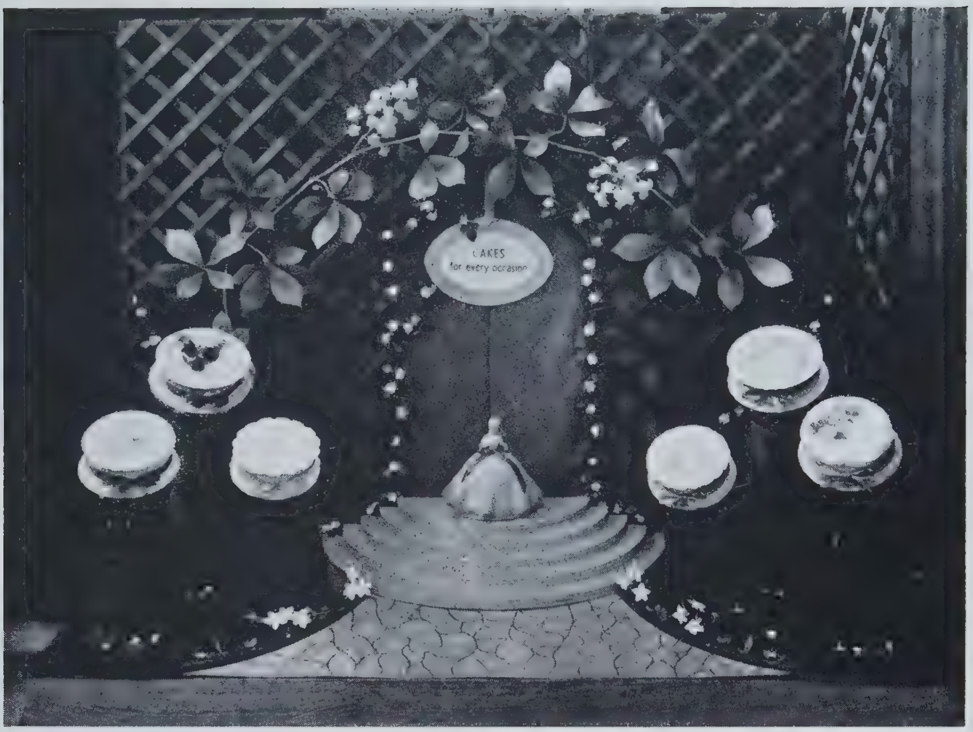


Fig. 16.1 *Display of Birthday Cakes.*

16 *Birthday Cakes*

A Birthday-cake celebration of the all-important birthday bears witness to the increasing popularity of the birthday cake for both adults and children alike.

The infinite variety of possible decorations for birthdays gives one the opportunity to exercise ingenuity and originality, and there is a very comprehensive range of bases to choose from. These comprise the heavily fruited cake and the many intermediate types to the simple sponge layer used for children's teas.

Similarly there is a good variety of sugar coatings, and while in some instances it is still an advantage to use royal icing, different forms of soft icing are preferable in certain cakes, while it is not unusual even to have a combination of the two types. This must of course be left to personal tastes but it is intended to show the various uses of such sugars.

USE OF COLOUR

Colours are also used in the base coating as well as in the piping, and a good deal of care should be exercised in keeping the colour to pastel shades. Never overdo colour but always know its strength and determine its suitability for your purpose. Try to maintain the same colour in the piping as the base, for your border can still be emphasized by outlining in a darker shade; the darker the colour the finer should be the line, and remember that pastel shades look much the more palatable. A good clean colour is just as important as clean working conditions.

Although a variety of colours and contrasts will be given, white and pink are commercially the most acceptable colours today. The decorated birthday cake will also provide the chance to develop one's own style of decoration plus the added advantage of producing various motifs. The modelling of roses and other flowers, coloured figures, plaques, and a limited amount of painting extend the craftsman's art still further and are appreciated by the recipient. Alternatively a variety of specially made decorations are always available from the manufacturer, but while set in their own designs they are limited in their use and do not have the same flexibility as the artistry of the decorator.

STANDARD WEIGHTS

Some indication has now been given as to the many possibilities, and it is therefore feasible for the customer to order almost anything at will, especially from the smaller business; but where any quantity is to be produced it is advisable for a larger business to introduce some standardization and limitation of the smaller units. For example, if a fairly heavily fruited cake is often to be used, make it in three sizes, their finished weights being $2\frac{1}{2}$ lb., 4 lb., 5 lb., and anything over those weights becomes a special order and must be dealt with on its own merits. The cost price must always be considered in conjunction with the amount of almond icing used, and although the weight can be adjusted the recognized proportion is half the weight of the cake, which should be a quarter of the total weight.

ROUND CAKE

Finished wt	Wt of cake	Wt of paste	Size of board	Sugar base
2½ lb.	1½ lb.	8 oz.	8 ins.	8 oz.
3¾ lb.	2 lb.	14 oz.	9 ins.	14 oz.
5 lb.	2½ lb.	1 lb. 4 oz.	10 ins.	1 lb. 4 oz.

SQUARE CAKE

(under 4 lb. is too small)

Finished wt	Wt of cake	Wt of paste	Size of board	Sugar base
4 lb.	2 lb.	1 lb.	8 ins. sq.	1 lb.
6 lb.	3 lb.	1½ lb.	9 ins. sq.	1½ lb.
12 lb.	6 lb.	3 lb.	14 ins. sq.	3 lb.

(Weight of cake refers to the baked weight, so allowance for baking loss should be made.)

The above weights and sizes refer to a medium heavy fruited cake, and as regards the square type you will see from the board size that a 2 lb. cake should be the minimum base considered.

For larger sizes a good guide is: a 26 × 18 in. sheet tin will require 20 lb. of cake to give a 2 in. depth, and the thickness of paste can be adjusted as required. The following formulae produce cakes of a very good quality and can be slightly price adjusted by the regulation of the fruit content.

No. 1 Best quality fruit cake

	lb.	oz.	Method
Brown sugar	4	4	Blend butter and shortening together until smooth, then 7 mins. medium speed with other ingredients
Glucose		12	
Good white shortening	3	0	
Butter	2	4	
Salt		1	
Bakers' Grade flour		8	
Pasteurized egg	7	0	Add to the above very slowly over 5 mins. whilst beating on medium speed
Liquid milk		10	Break in on slow speed
Dark colour		4	
Orange or lemon			
Flavour (rum)			
Bakers' Grade flour	5	12	Sieve and add to the above and clear 1–2 mins. on slow speed
Ground almonds	1	0	
Mixed spice		¼	
Currants	15	0	Add and clear
Sultanas	15	0	
Peel	5	0	

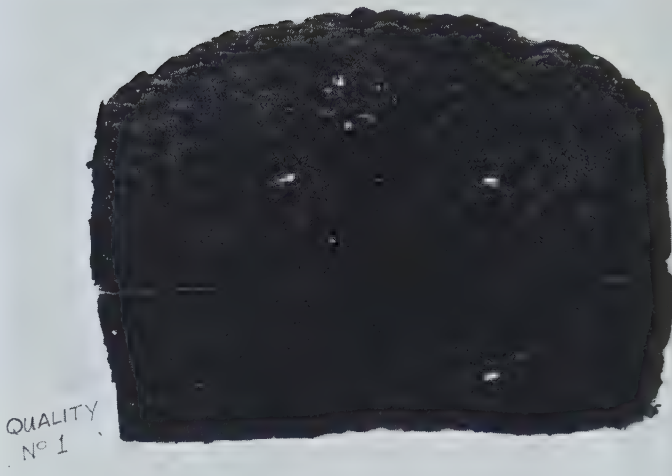


Fig. 16.2 *Quality No. 1. Fruit Cake.*

The fruit content is the maximum to use but can be reduced down to 8 lb. currants, 8 lb. sultanas and 1 lb. peel. By slight reduction in fruit the cake quality is not impaired.

No. 2 Second quality

	lb.	oz.	Method
Brown sugar	4	4	Blend together 5 mins. medium speed
Glucose		12	
White shortening	4	12	
Salt		2	
Bakers' flour		8	

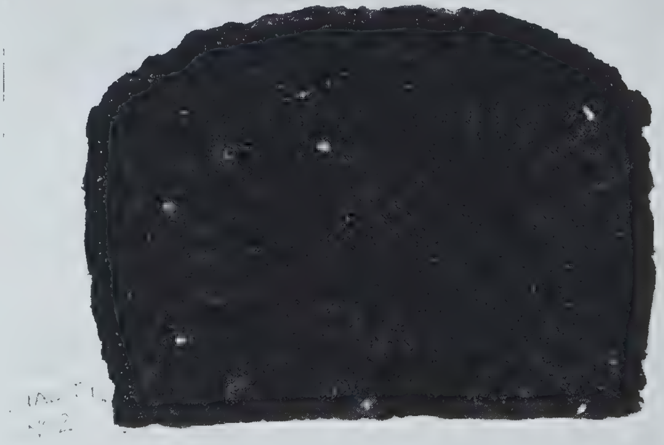


Fig. 16.3 *Quality No. 2. Fruit Cake.*

Pasteurized egg	6	0	Add very slowly over 5 mins. medium speed
Liquid milk	1	6	Break in on slow speed
Dark colour		4	
Flavour			
Orange or lemon			
Bakers' Grade flour	5	12	Sieve and add; mix 1–2 mins. slow speed
Ground almonds		10	
Baking powder		½	
Mixed spice		¼	
Currants	13	0	Lightly mix in
Sultanas	13	0	
Peel	4	0	

(Fruit can be reduced to 7 lb. currants, 7 lb. sultanas, and 1 lb. peel.)

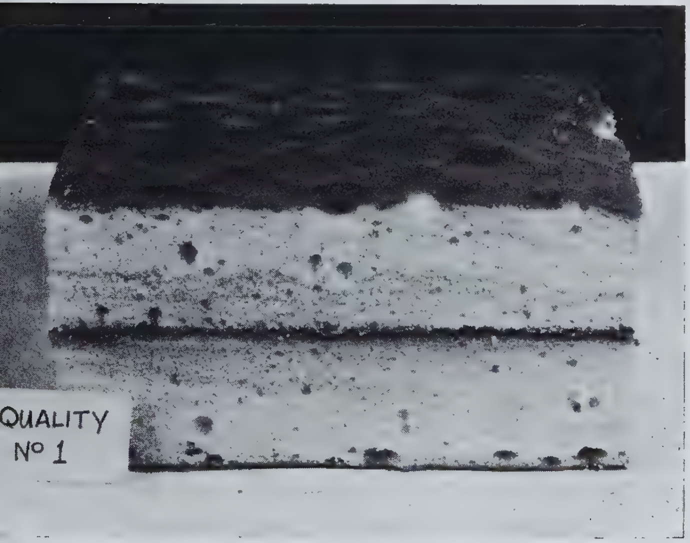


Fig. 16.4 *Layer Cake Quality No. 1.*

Layer cake

	lb.	oz.	Method
Special cake flour	6	4	Bring to a crumb on slow speed
Baking powder		5	
Granulated sugar	5	12	
Milk powder	1	0	
High-ratio shortening	1	0	
Good quality marg.	2	8	
Water	3	4	Add and clear slowly
Colour, flavour			
Pasteurized egg	4	8	Add and clear; scrape down and beat for 4 mins. on medium speed

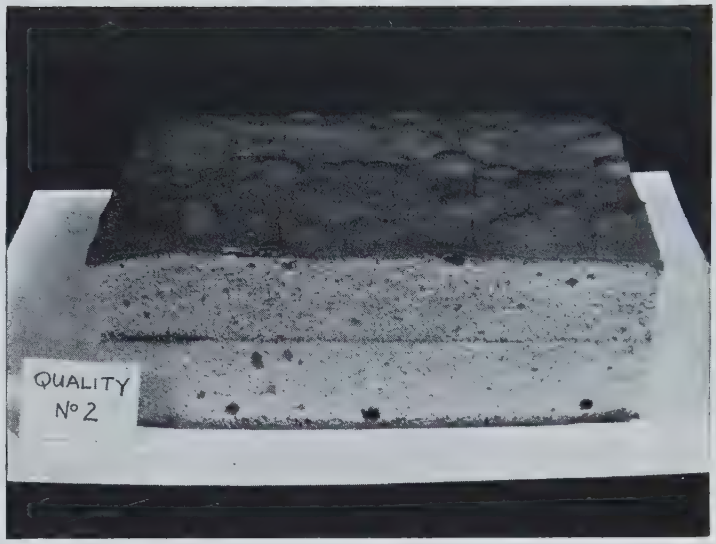


Fig. 16.5 *Plain Cake Quality No. 2.*

Plain cake mix, second quality

	lb.	oz.	Method
Good quality marg.	1	8	Blend to a paste for 3 mins. on slow speed
Shortening	1	8	
Granulated sugar	3	4	
Special cake flour	3	0	
Salt		1	
Glycerine		2	
Milk powder		1½	
Pasteurized egg	3	12	Add half on slow speed for 1½ mins., add the remainder over 1 min. Mix on top speed for 6 mins.
Colour			
Flavour			
Water		13½	Breakthrough for 1 min.
Special cake flour	1	0	Add and blend on slow for 1 min. with a final turn on top speed to clear thoroughly
Baking powder		1¾	

Numerical birthday cakes

The above mixture is very suitable for baking in numerical tins where the cake is to be supplied for a child's birthday. These tins usually only go up to the figure nine but on occasion a two and one can be aligned on one board, made with the heavier fruit cake suitable for a 21st birthday. The use of tins prevents any waste that would occur if the figure was cut from sheet cake; but in order to get some idea of how to maintain a standard finished weight, if the weight of the cake batter is such as to fill the tin when baked, then by cutting away any portion above the cake tin you should always commence with the same base weight. Provided the same weight of filling between the layers is maintained, the sugar coating can then be controlled.

The cake baked in the tin also gives a good firm side on which to coat, and any crumbliness from the cut-out figure is thus avoided. It is always better to give a coating of light royal icing prior to the final coating. To improve the appearance on top of the cake add a thin layer of marzipan: it is surprising how this gives more stability to the plain cake in the preliminary stages of icing.

COLOUR APPLICATION

Before proceeding with the birthday cake, we must first look at the various types of sugar coating we are able to use. We have through earlier pages dealt in detail with royal icing and its use. A birthday cake is much the same, with the exception that the introduction of colour is the most notable feature.

Most of the exhibition commercial cakes are finished in this way unless instructions to the contrary have been given, and with royal icing that clean matt surface is always prominent to enhance the appearance. It also allows for a good colour blend, and with pastel shades some very delicate and distinctive shades are brought into being. Colours may also contrast well, particularly when a darker or bright colour is set against a pastel shade, but more will be said about contrast in a later chapter.

THE USE OF FONDANT

The next medium to be considered is fondant, chosen by many for its softer eating qualities, for though royal icing excels in its clean sharp appearance it lacks palatability. Fondant also maintains a high gloss when well manipulated and is very attractive.

Fondant produced by the manufacturer today is delivered either in 28 lb. boxes or tins, and must first be brought to a workable consistency with a little simple syrup which not only softens but preserves the crystal formation, which if looked after gives the lasting gloss we so diligently strive for. Where larger quantities are required for general daily use some form of mechanization should be introduced. There are fondant machines which by turning the fondant over while the container is moving gradually bring the sugar to a workable condition. These vessels are usually steam or water jacketed which helps with the softening, and if the simple syrup is added during this stage the fondant will be conditioned more easily. Care must be exercised in controlling the temperature of the water and gradually reducing it as the fondant reaches the desired consistency.

Ready-prepared Coatings

In recent years the making of fondant has progressed still further, and it can now be purchased in bags in dehydrated form. All that is necessary is to add the stipulated amount of syrup and heat to 105°–110°F. prior to using. This type of fondant is particularly useful, for a great amount of labour is saved in the preparation. If large quantities are to be used it is advisable to employ the mechanical methods to ensure a homogeneous mass and it proves more satisfactory if left to condition overnight. From the bulk any quantity is then coloured ready for use. Colour should be carefully added to achieve the correct shade, and with fondant the colour remains fast, that is, the density of colour is the same throughout. Where large quantities are being dealt with, some sort of standardization should be brought about by a measured quantity of colour to a given weight of fondant, and this is especially desirable with chocolate fondant. This not only gives a standard colour to the fondant but to all the various types of goods to be covered. The best results are obtained by the use of pale shades and if any emphasis is to be given a contrasting darker colour is used: but remember, the darker or brighter the colour, the finer the line should be. Fondant used in quantity is as a rule processed through an enrober, and birthday cakes from the plain formulae should be coated by this procedure and transferred from wires to the silver board to be piped.

Soft icing made for the covering of such cakes is also unique in its preparation. Mainly a composition of boiled sugar, glucose, and whites of eggs, the icing is heated preferably by standing the pan in warm water, and then softened to the desired consistency with simple syrup or water. The main advantage with this product is that once the covering has been given to the cake the sugar will reach a piping consistency if beaten with the spatula to incorporate air. The degree of beating will determine the consistency and the more air taken in the more the sugar will peak. Therefore when the sugar is so conditioned it is possible to pipe with a star tube and use any type of scroll work, which in turn will lend itself to overpiping. All three mediums then have different degrees of colour shades at the base and therefore have their own colour values, with added colour.

The main advantage in using soft icings is that as they are quickly prepared only sufficient for one cake need be heated at a time. They have good setting qualities and the sugar skins over very quickly; they are therefore easily prepared for transportation.

Where coloured sugars are required for overpiping and general decorative work, it is much easier to prepare a very small amount on the table providing it is easily removed, and to use a very small bag. Never make up quantities of colour that cannot be used.

17 *Lettering*

THE ART of lettering is an achievement every student should try to perfect, for many a well-decorated cake has been marred with a badly piped inscription. Such occurrences are all too common, and so some thought and care should be taken in choosing letters to form an inscription that will enhance the final decoration.

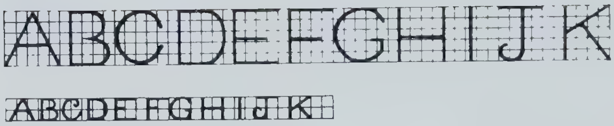
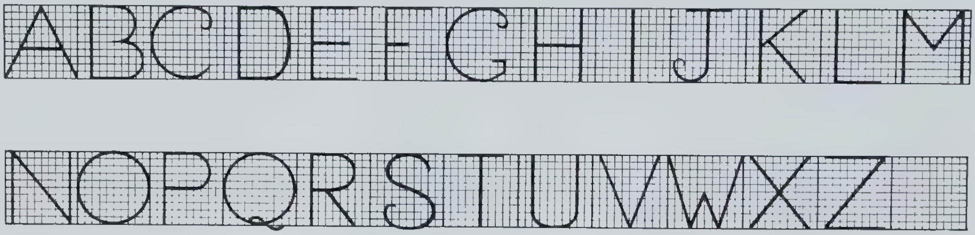


Fig. 17.1 ½ *in* — ¼ *in square graph. Roman.*

Fig. 17.2 *One-inch square graph.*



Different styles

The most important point is to maintain the correct type of lettering throughout, for nothing looks worse than a mixture of capitals and small letters. There are innumerable types and recognized styles of lettering and with practice one can eventually evolve a style of one's own, but first of all let us consider the basic form of the alphabet and the easiest style to begin with is that which uses straight lines only.

The letters are drawn on graph paper, each letter occupying a 1 in. square, and if they are done in ink they will last a considerable time and, with the use of a waxed paper over each section, will provide a good medium for piping practice. Once the knowledge of line work and spacing has been memorized, the letters can be further reduced into a quarter square or even less, for the graph square will always provide a

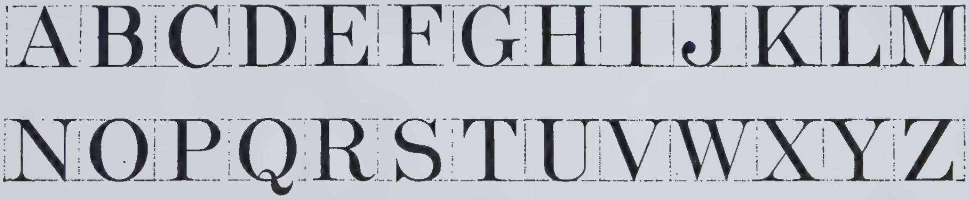


Fig. 17.3 *Roman capitals.*

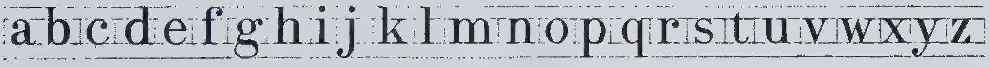


Fig. 17.4 *Roman small.*

Fig. 17.5 *Italic capitals.*

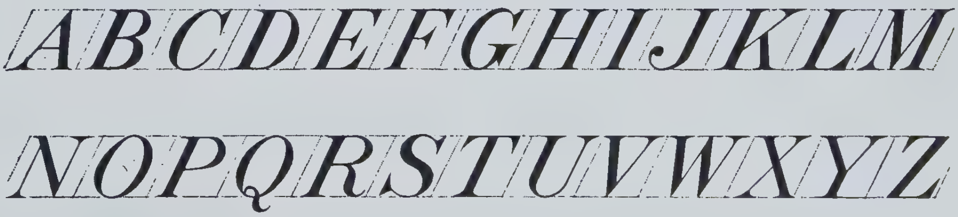
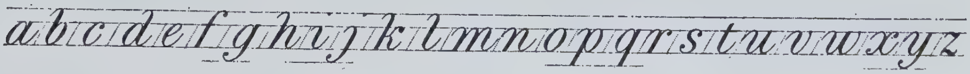


Fig. 17.6 *Italic small letters.*



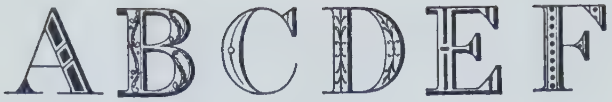


Fig. 17.7 *Roman ornamental capitals.*

reducing guide. The line work having been practised, then the basis for a gradual advancement has been formed.

ROMAN LETTERS

Lettering falls into certain recognized categories, most of which are developed from the Roman alphabet. The Roman letters are composed of thick and thin lines or curves and the capital letters give very prominent and clear forms. As with all letters used in printing, the composition of a word is most important, for there is so much variation between different letters that a good deal of thought must be given to the spacing of each. In this way evenness and correct balance will be maintained throughout.

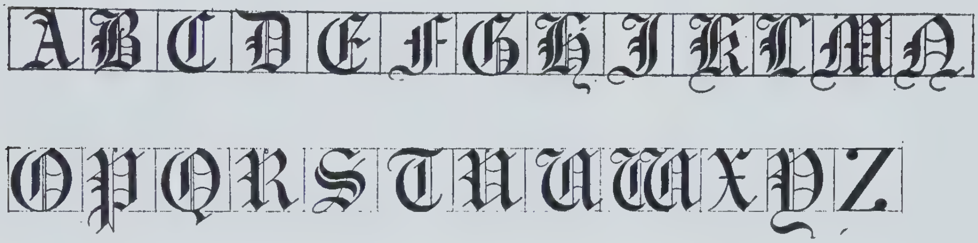
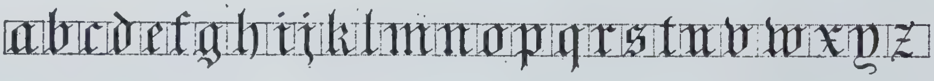


Fig. 17.8 *Old English capitals.*

Fig. 17.9 *Old English small.*



There are many variations in the Roman letters which are thus very adaptable for decorating. For instance, their application to sugar work is made by the use of two thicknesses of piping tubes, No. 0 or 1 for the thin lines with No. 2 or 3 for the thicker lines; but remember this gives a rounded appearance to the letter whereas your copy is flat. This is one point we must accept in decorating, for after all we are only using the letter to give the correct form and smoothness to the inscription. Similarly where we are to make a line with a graduated curve as in B this will be achieved by using a small tube and applying the correct pressure.

To be a little more precise about lettering: various combinations of thicknesses of line lend themselves to further embellishment, such as the ends of letters. The downward curving stroke composed of a thick line and the curve of a thin one are examples of variations that look attractive although a good deal of attention must be given to their execution. The same variations in lettering can be set at an angle of 60°, when they are known as Italics – a style somewhat different to the Roman.

ORNAMENTAL LETTERING

A capital letter in the Roman ornamented style is sometimes chosen, which means that some form of ornamentation is used within the letter. In piping this would amount to fine bulb work or even miniature scrolls.

Ornamental letters are taken a stage further, for not only are they decorated within the letter but a more intricate form of embellishment is added to the outline. In certain instances capitals become quite imposing and lend themselves to colourful effects.

Old English Type

Although there are many different yet correct styles of lettering, perhaps one of the most decorative used is the Old English type. This needs a thorough study to become effective, for each individual letter has its own characteristics, especially with the capitals. The smaller letters to some extent fall into similar style, and are mostly composed of thick downward strokes, the end of the letters terminating in a thin line usually at an angle of around 30°. After the small letters have once been drawn you will find them very easy to remember.

This type of lettering is intended to be piped straight on to the cake and only practice will give the confidence and proficiency required. Again the thinner lines are piped with a No. 0 tube and the thicker lines, for which the sugar should be slightly softer, are piped with a No. 1 or 2, depending upon how thick the line must be. By using a little softer sugar a flatter appear-

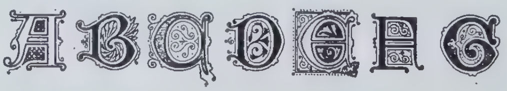


Fig. 17.10 *Gothic style.*

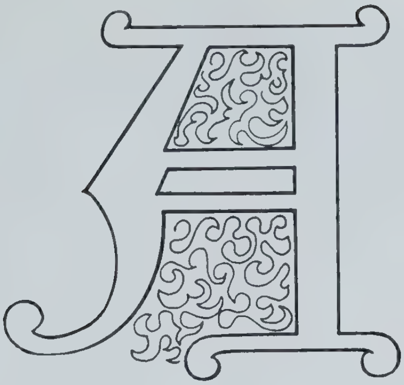


Fig. 17.11 *Decorative capital to draw.*

ance is given to the line; for with stiffness and boldness of the sugar, the letter is inclined to lose its smooth effectiveness.

German and Church Texts

The German text has a definite resemblance to the Old English, with the smaller letter the same downward thick stroke is always shown but differences are effected at the termination of each letter as in Y. Church text is another variation of Old English, and the main difference is that the letters are taller and the width reduced which gives a closer print. The ends of the letters seem squared thus removing the 30° upward line. Any embellishment is either at the end of the letter or composed of a downward line within the letter. As a rule the capital letter is enclosed in a highly decorated design, normally with a background of dark red colour. A similar type of embellishment is found in the Gothic style, which in some letters seems to fall into a category between Roman and Old English.

With the various styles that have been illustrated sufficient knowledge is now within the grasp of the decorator. These are all recognized styles of lettering and with modern methods the formulation of letters is comparatively simple. Whereas in the past lettering was an art and provided some training in drawing, there are now all manner of stencils available in various styles and sizes and you only need to trace the letter to make yourself a permanent record for future reference. In stencilling it is not only a matter of following the letter, but any sequence of letters can be made and the spacing of each automatically follows. Therefore inscriptions can always be prepared, and if covered with wax-paper a definite guiding line on which to pipe is visible.

Block Capitals

Block capitals drawn in this way are first piped and then filled in; then set to dry, when they are transferred and fixed to the cake top as desired. This is a system of lettering used in many trades, particularly publicity, and provides a basis for notices, price cards, labelling, to mention a few, but it is the modern means of lettering application for the decorator. Such lettering also comes under modern headings such as Roman upright, condensed, and architectural. Figures and numbers are also produced in this way in many sizes and provide a very good copy from which to pipe.

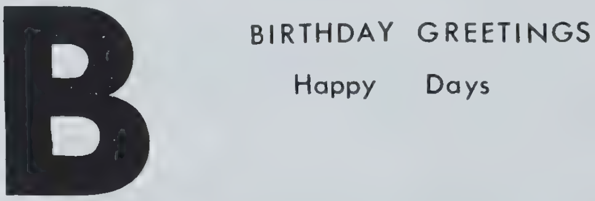


Fig. 17.12 *Large block.*

Letter transfers

Another modern development is the dry transfer method. The letters are arranged on a transfer sheet with lines ruled between so that the correct position is maintained throughout. All types and sizes of letters are available and you first select the letter you wish to transfer, place it as required, then by shading across the letter with ball pen the letter is transferred to the paper. To complete the fixing just shade again, using the plain transfer paper. Such letters will adhere to almost any smooth surface. This provides a very quick means of making display cards, signs, labels, etc. We do not advocate the actual use of such a decoration: it is merely

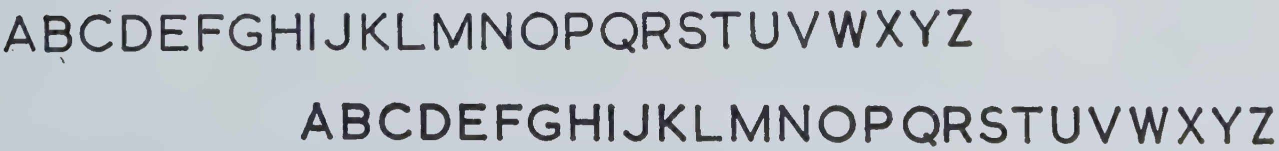


Fig. 17.13 *Small stencilled.*

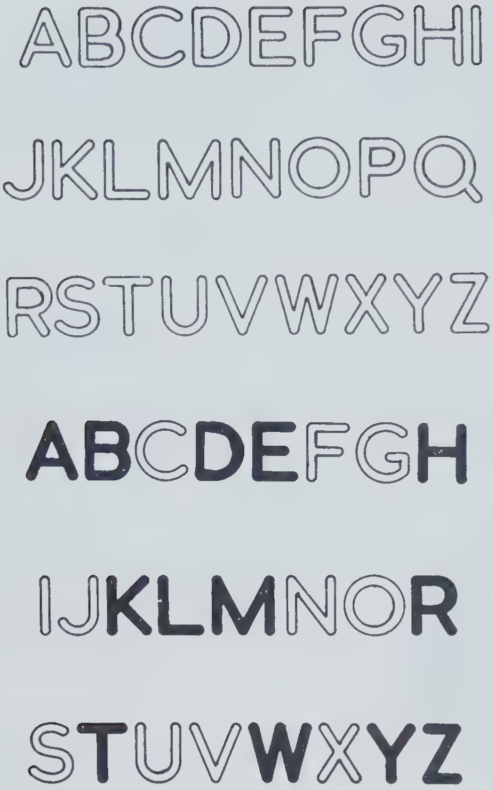


Fig. 17.14 *Dry transfer.*

intended to act as a guide. If the correct style and size of letter is transferred, then here is your copy from which to pipe and therefore the necessity of drawing is eliminated. For those who are not too proficient in freehand drawing, this medium could well be a successful aid.

A general review of modern lettering has now been given, and it is for us to use our ingenuity in adopting different styles, and perhaps create and improvise in such a way as to add our own mark of identity.

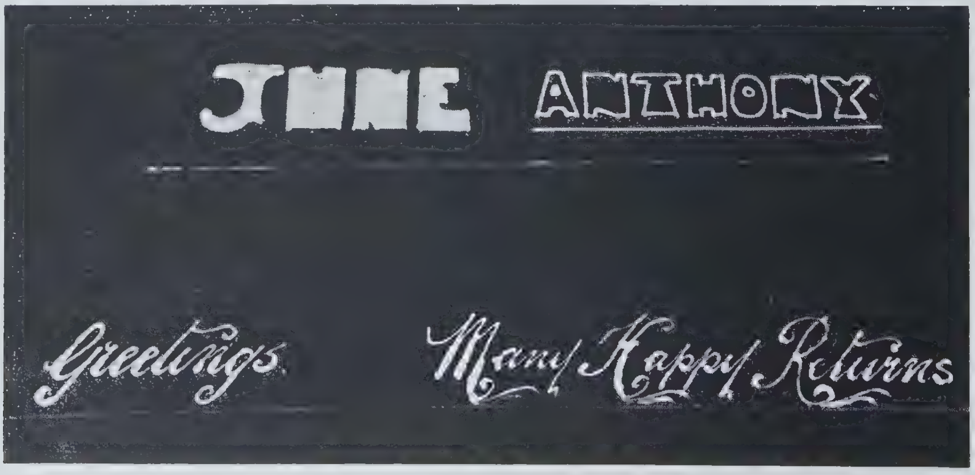
SUGAR-FILLED LETTERS

For instance, look at the normal line in the name 'June' and note the difference with block capitals. Now suppose the name were required for a child's cake, by a letter substitution the name is brought in to correspond with the age of the child (June or Anthony). After outlining, fill in with sugar, basically white but some very pleasing finishes are brought about by the use of two additional colours. Pink in the top third of the letters, green in the base third, with the centre white; or use one colour at the base – green being the best general colour will look very attractive. As an alternative colour scheme use pale lemon yellow in the centre, pale blue at the base, and green at the top. Use sugar of the same consistency and merge the two colours with a paint brush; or make a complete division of the colours so that it gives the impression of a line running through; then again if the dark sugar is brushed into the white in an upward movement quite a different effect is produced.

Colouring

While considering colour, the greeting may be piped in a single line then overpiped, the base in green and the top in pink; or the single line may be finished by placing a coloured dot at the end of each downward stroke, and is more effective if the piping of the letters is closed up a little and they are made to look taller. So many variations are made by slight alteration to the letters, as will be seen with various sizes of cakes. If a large area has to be decorated then the size of the letters must be in proportion to create the right balance. Should one section offer a little more space than usual then this is overcome by making the capital much larger, and with further embellishment or colouring it will emphasize the importance of the inscription.

Fig. 17.15 *JUNE – piping ANTHONY (Top pink, base green) overpipe.*



Script letters

So far the printing of letters has been the main theme but to the more advanced decorator the use of script letters is equally important and perhaps more popular, as the flow line of the letters becomes somewhat easier and quicker to execute, and they are piped direct on to the cake. There are two distinct ways of producing script letters and these depend upon the cake surface.

If the surface is soft-iced with fondant or similar icing then the letters must be piped with a suspended line, that is the sugar is piped and the action of the wrist will guide the line into place. Always make sure you release the pressure to give a neat end to the line.

The second method is used where the surface is firm and smooth as in royal icing. With a fine tube the letters are piped as you would write; by holding the tube at an angle so that the base rests upon the cake you will find that, given the correct pressure, the line will pipe naturally with the flow and smoothness you expect in your normal writing. It will be seen that a much finer tube may be used, giving a lighter thinner, and more delicate touch which will provide the basis for greater embellishment. Again this is a medium that requires a considerable amount of practice but when confidence has been gained the effort will have been worth while.

Writing in sugar

Where a smaller space is available for the inscription we generally look to writing rather than script letters because the size can be more easily adjusted. In writing one must develop the thick downward stroke against the thin upward stroke, and the downward stroke can always be made more prominent by piping over the top or alternatively piping the lower third of the downward line in another colour.

The composition is based on large capital letters followed by the smaller ones. One point here must again be repeated: while we advise the use of a fine tube it is also possible to do this with a paper bag only, but remember the finer the tube or aperture the smaller the bag should be. Perhaps only one cake is required in one colour so only make up sufficient to do this, even a bag only 2 ins. in length is big enough for such an operation, and be sure the point of the paper is absolutely tight, then cut it off very fine with sharp scissors. Unless this point is tight and evenly cut you will not produce the round line so necessary for this work. When using these very small bags it becomes easier to pipe with two colours. A little darker colour is made on a scraper or knife and is placed down one side of the paper bag with the handle of a paint-brush. Only a fine line should be inserted. Then place in the other colour, preferably white, making sure it reaches the base of the bag to draw out the coloured sugar, but beware of filling the bag too full. Allow plenty of room to fold in the top. In piping with two colours arrange the sugar to be piped with the dark colour on top for the pale background will not only blend with the base colour of the cake but will also tend to give prominence to the darker colour. As you experiment with such colours so the whole operation becomes more interesting.

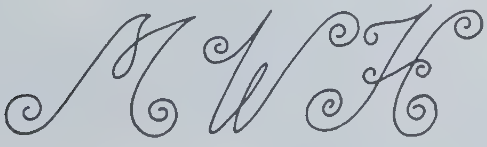


Fig. 17.16 *Writing script.*

One advantage of being able to write in sugar is that instead of piping directly on to the cake, small name plates may be made from run-out sugar or marzipan, 3–4 ins. in length by $\frac{1}{2}$–$\frac{3}{4}$in. in width. Chocolate is also treated in the same way by spreading it reasonably thinly on to a wax-paper or, better still, polished metal, and when set but not hard it is cut into suitable pieces using a ruler and knife. When fully set the chocolate will contract and leave the metal with a shiny surface, a surface that will improve and help the flow of the sugar. Inscriptions are thus prepared at any odd moment and rested against a bulb of sugar which will allow the plaque to stand away from the surface of the cake. Any of the above plaques have seasonal advantages, and prepared in advance they save valuable time.

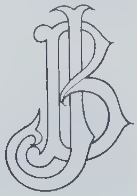


Fig. 17.17 *Monogram.*

Initials

Initials are quite often asked for with wedding cakes. On either side of the wedge, the bride's and groom's initials are mounted. These can be piped directly on to the side panel or on to a previously made shield or plaque with a plain tube, or if desired the letter may take the form of a run-out and be tinted when dry. Quite often such letters are made a little more decorative and placed side by side. Some years ago initials used to be coupled together in the form of a monogram, and while these are very decorative not all initials lend themselves to this treatment; also a good deal of time is required in designing and this is probably why initials are placed side by side today. In preparing a monogram it is essential to make the design as decorative as possible without losing the value of each letter. They must interlock yet show no weakness, and if combined colours are used they merge without losing their identity.

18 Flower Piping

THE ART of flower piping has almost disappeared from the decorator's trade, though in past years it was a necessity to perfect this art and formed part of the general training. In these modern days this work has been passed to the manufacturer and we come across some very fine examples of mass-produced sugar flowers.

The size range is also very extensive, from as little as ¼ in. up to 1¼ ins. The smaller or miniature varieties are now mass produced by machine at a price that will allow for the decoration of fondant fancies. The flowers are usually sold in assorted colours, white, lemon, pink, orange, and violet, and provide a very quick yet attractive finish to a fancy.

Sugar flowers slightly larger, ½–¾ in., are prepared for the large type of gateau, and with a little prearrangement attractive sprays can be made. Generally when considering sugar flowers we tend to refer to the larger individual types that are prepared for birthday cakes. A selection has been arranged of various flowers that can be bought ready made from the different suppliers to the trade, and this gives some idea of how the flowers are piped – with various finishes.

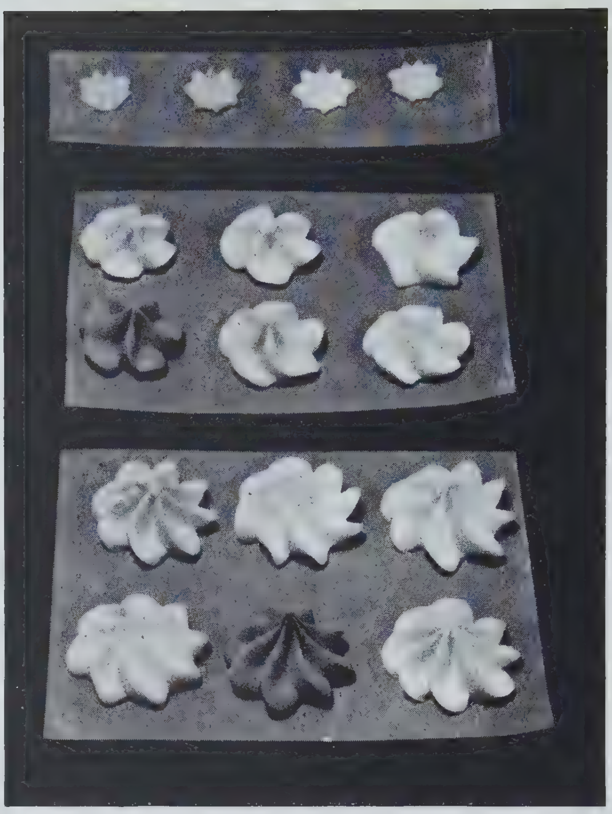


Fig. 18.1 *Assorted sugar flowers, machine made.*

Piping equipment

For flower piping we need a series of graduated petal tubes. The ends of these are curved to a narrow and fine end which is intended to give thinness to the edge of the petals. Sometimes it is necessary to have the edge tinted a darker colour, say a white-petalled flower with a dark red or pink edging, then it is down the narrow end of the tube that the colour is placed. Care must be exercised here, for although the coloured sugar must pass through the narrower part only sufficient is required to give a tinting. The bag must not be too large

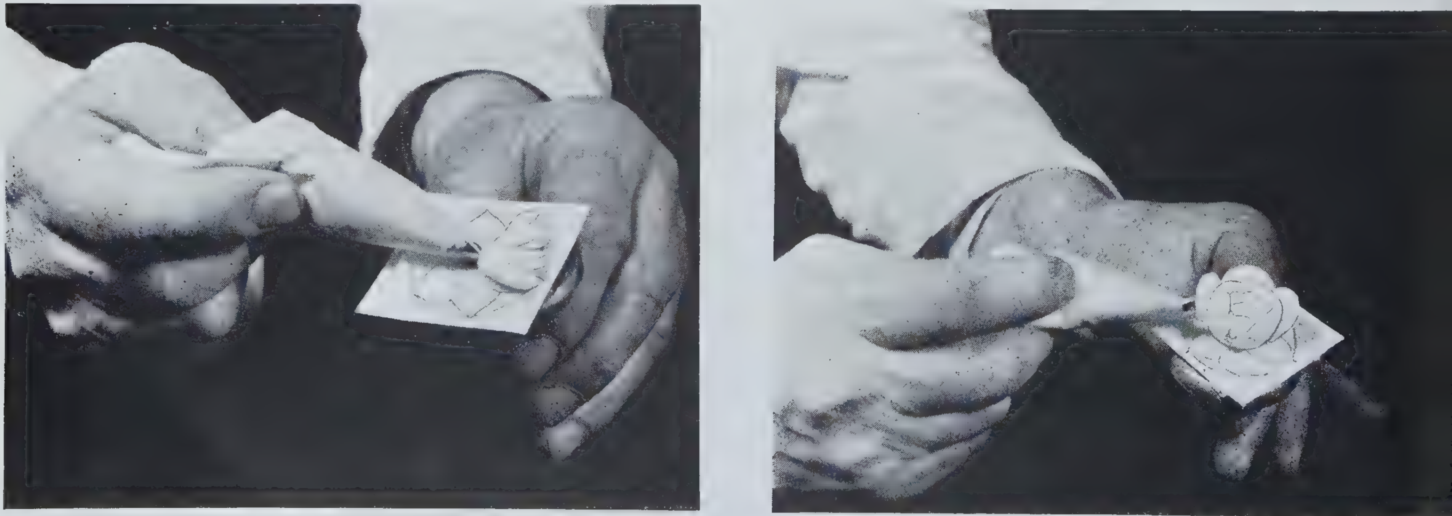


Fig. 18.2 *Rose nails. How to use and pipe the petals.*

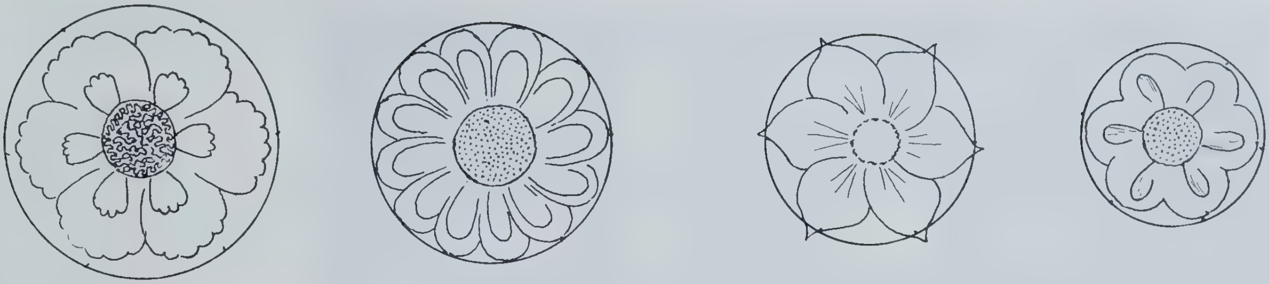


Fig. 18.3 *Petal formation, drawings.*

or full and should be changed regularly, otherwise the coloured sugar will increase in tone as the bag empties. The best way to insert the coloured sugar is with a fine paint-brush handle or something similar, for it is essential to ensure that the sugar is even and in line from the tube to the top of the paper bag.

ROSE NAILS AND THEIR USE

Flowers are piped on rose nails, round domed pieces of metal in which a centre stem has been inserted. The nail is moved in circular fashion between the thumb and forefinger of the left hand so that the flower is piped on to a wax-paper square, petal by petal. The motion of moving round and round allows for the individual formation of each petal. To give some guidance it is as well to have drawn the petal formation of the flower on paper, then secured to the rose nail, over which the wax-paper is placed, for one of the most difficult tasks for the learner is to space out the circle evenly and at the same time keep the petals uniform throughout. Nothing looks worse than to see one petal larger than the others; evenness in piping is a key to success with flowers.

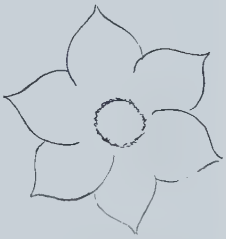


Fig. 18.4 *Pattern to use on a rose nail.*

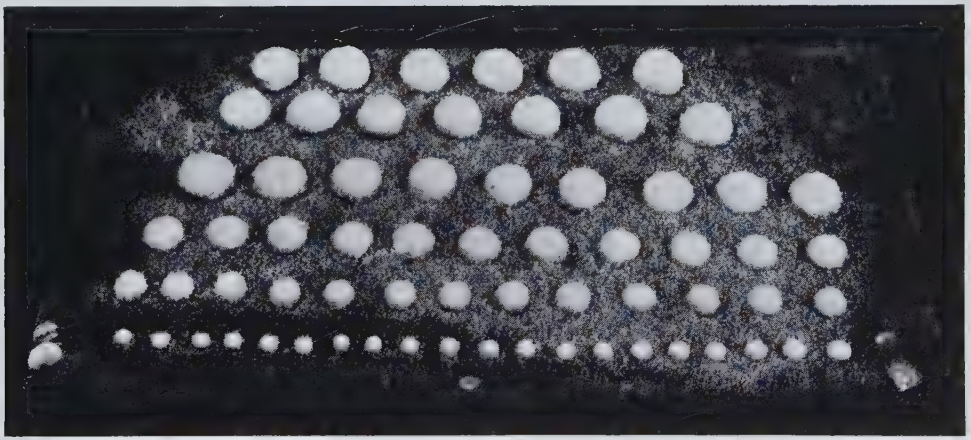


Fig. 18.5 *Assorted sizes of flower centres.*

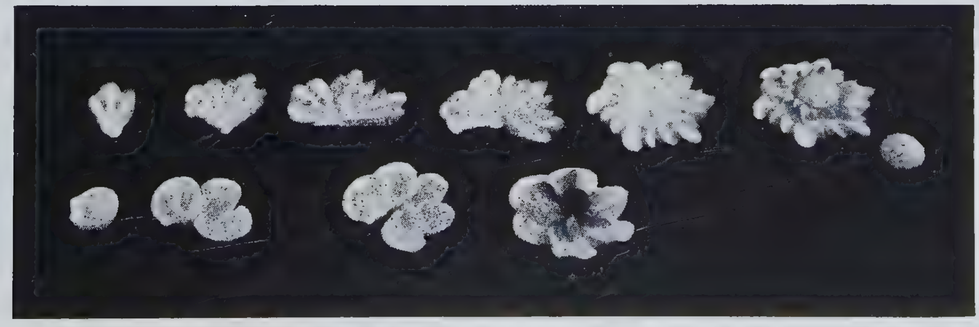


Fig. 18.6 *Six-petal flower, cupped edge.*

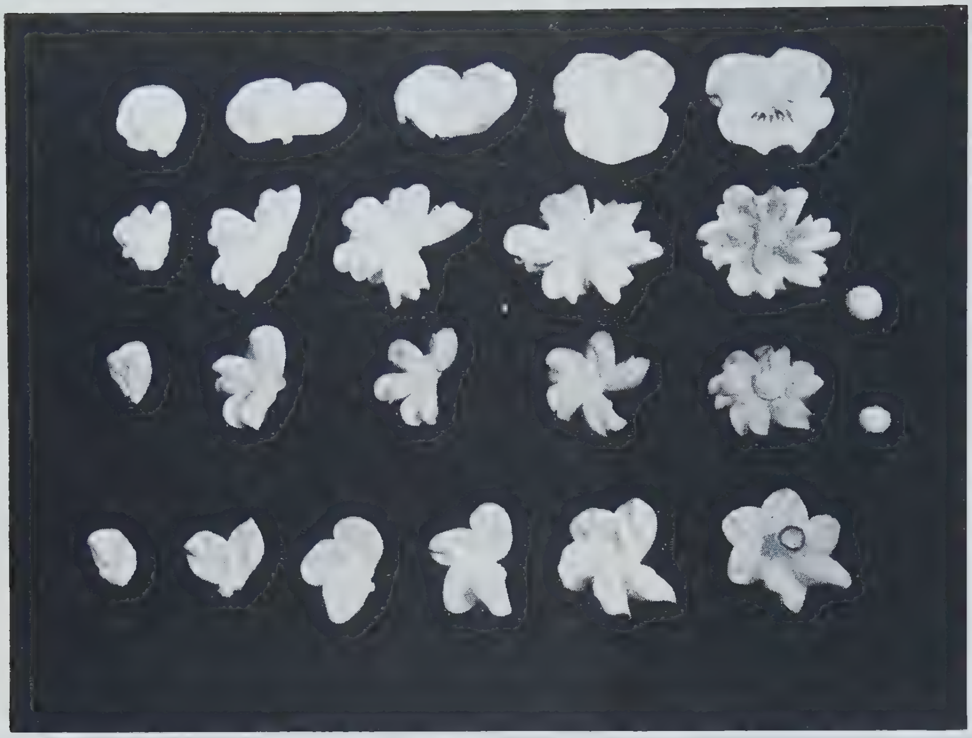


Fig. 18.7 *Large flowers, petal formation.*

Petal formation. The procedure is as described in general piping: press, formation of petal, and release of pressure. The last petal is always the most difficult to finish, for the completion of the shape must coincide with the cut-off of the sugar in such a manner as not to damage the first petal. Sugar should always be well beaten; not too aerated but of good piping consistency with a shortness that will allow the sugar to break off easily.

The first exercise then is to pipe a six-petal flower with a rounded cup edge. First draw the six petals and prepare some squares of wax-paper, secure to the rose nail and practise moving the rose nail round and form the first petal, and at the same time press out sufficient sugar to give the curve and size required. Continue to practise this movement and pressure until you have the feel of the sugar and you have gained confidence. Once these initial stages are accomplished the more complicated formations will be undertaken with greater ease and assurance.

Narcissus

This flower that is always popular especially during the spring calls for a slight variation of the previous exercise. Instead of piping each petal round, the pressure of sugar is made to take each one to a point, after which the tube is gently turned and the sugar returned to the centre; at the same time the pressure is released and the tube is drawn away towards you, giving the required cut-off. This is one movement, and in so doing you provide the vein down the centre of each petal. The second petal is then formed immediately behind the previous one, and as the sugar returns to the centre this forms a curved edge under which the next petal is commenced, and six petals complete the flower.

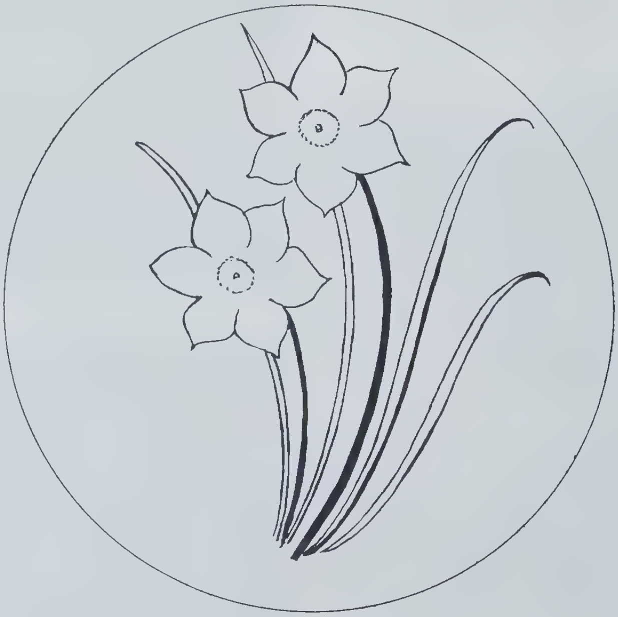


Fig. 18.8 *Narcissi. Drawing and arrangement.*

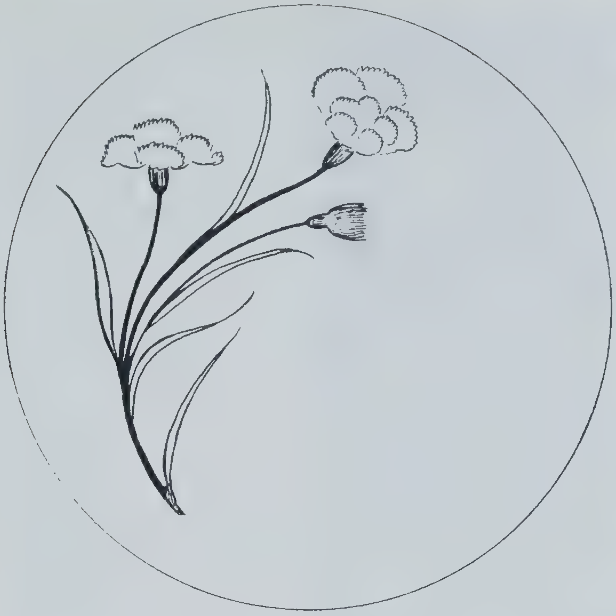


Fig. 18.9 *Carnations.*

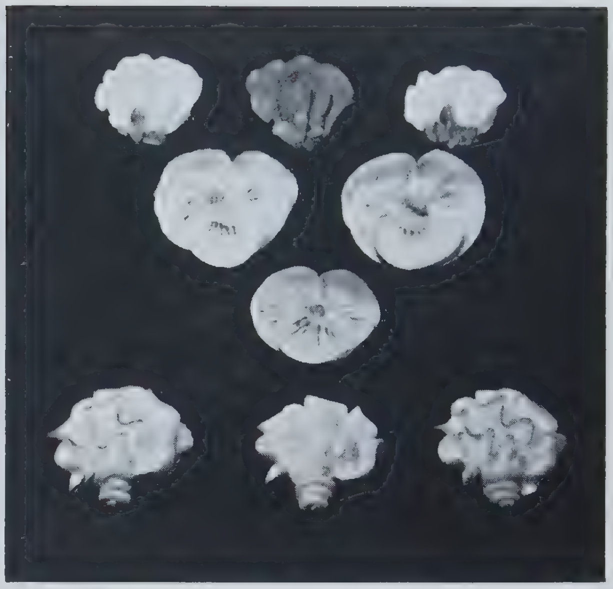


Fig. 18.10 *Carnation sugar flowers.*

Flower centres. Sugar flowers are produced in two sections: petal formation and centres, usually prepared beforehand then set in the centre of the petals while still wet. The centres for the narcissus are piped on wax-paper, using a No. 2 pipe tube and lemon-coloured sugar. First pipe a small bulb then pipe around the edge in a circular fashion continuing until four coils high, each coil being piped on the edge of the previous one to give a cup-like shape. The top edge of the coil is then either tinted with a touch of red colour or an irregular line is piped in red sugar with a No. 1 tube. When these centres are set, one is placed in the middle of each flower as it is piped.

Daisies

There is no set design for a daisy: one way is to pipe a series of long, slender petals close together, keeping within the circle. Be sure to narrow the tube on its return to the centre otherwise too much sugar will build up there. A second way is to pipe petals close together but not so long, giving each a nice rounded edge. This action is sometimes repeated with a smaller tube upon the previous petal. Centres are made by first piping a bold bulb of sugar and then covering it with nonpareils in various colours. Coloured coarse sugar is another form, and with a smaller flower a mimosa centre is used.

Variations on this type of flower are often seen, mostly composed of six petals piped in a pale salmon-pink sugar, with a contrasting sugar of a darker pink or even pale mauve piped on top of each petal, and a chocolate centre inserted. One can also have white petals with pink or red edging, again with a smaller petal on each and with a yellow centre.

Six-petalled flowers can be given a crinkled effect by making each petal with movement of the wrist, quickly repeated three times. In such flowers the colour can be further elaborated by darkening the petal around the centre, which could be green.

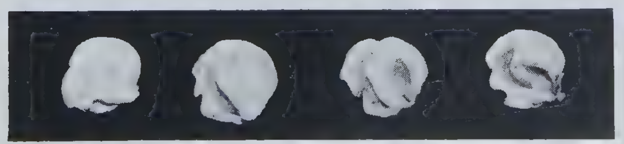


Fig. 18.11 *Sweet Peas, photo.*

Sweet peas

Naturally these are prepared in great variety, basically with two combined shades of colour, the darker colour being most effective piped along the edge, although a single colour may be used. When two colours are used then the darker is placed down the side of the bag with the narrowest end of the tube, the remainder of the bag being filled with the lighter sugar. First pipe some of the sugar out and this will then give the blend required. Sectionally the sweet pea is piped with two large outside petals, two inner ones forming a heart shape, and a centre petal piped with the tube in an upright position and drawn towards you. The end is then piped with a little green sugar to form the stalk.

Pansies

Again five petals in suitable colours, first two medium petals, followed by two larger petals, and completed with one large petal as shown. Allow to dry then colour the centre a good yellow and streak the lower petal with mauve, using a fine paint-brush. A green dot right in the centre will complete the flower. The main point about these flowers is the sweep round of the last petal.

Carnations

The piping of carnations is perhaps a little more difficult for not only is the formation intricate but colour varies with each variety.

A general instruction will be given based mainly on the piping. First the piping of a full flower: start by piping the outer petals in the form of a wriggly line with a petal tube held at an angle of 45° while turning the rose nail with the left hand. A second line is now piped on top of the first but nearer the centre; remember that the flower must have a nice even down shape when complete. Having now piped the second line, hold the tube at 90° from the centre and pipe a wavy line first to the left then to the right, continuing until the outer petals are reached. This operation is repeated five or six times, beginning at the centre and working to the outer edge to complete the flower. A very thin edging of dark-coloured sugar may be used to give a tinted outline to the petal, or the flower can be piped in one colour and the edges tinted with colour when dry.

These are very bold flowers and it is therefore necessary to keep them in proportion to the size of the cake. Where a carnation is shown with stem and leaf, the head of the flower should be piped on a flat wax-paper surface, giving a wriggly continuous edging yet conforming with the shape of a carnation. A bulb of pale green sugar is piped at the base of the flower to which the stem will join after the flowers have set and been positioned on the cake.

Roses

Centres for roses are prepared by piping a rounded bulb of sugar on wax-paper – in a variety of colours if desired. Remember that the centre of a rose is the darkest part and shades to the outer petals. To give a more open effect to the rose these centres are covered with various coloured nonpareils. The centres must be dry before using them.

The centre is made with a circular movement on the top of the bulb while the petals are formed by holding the tube in an almost upright position then raising it with a semi-circular movement which will tend to curve the top edge of the petal. The second petal is commenced so that it overlaps the first, and the same movement is continued until the whole of the centre has been completed.

As each petal is formed any particular edge can be pushed into shape with a small paint-brush which is particularly useful when the last petal is piped; it will give a good rounded appearance to the rose. By a systematic study of petal formation each petal will be correctly placed to complete the rose. A reduction of the petal formation will mean altering the size of the bud. While no two flowers are the same, one tends to maintain the same number of petals when a rose is to be piped. A more open centre is made by piping six curved petals on the edge of the bulb centre then following with the larger outside petals. Again, when the colour has been placed at the centre, you may also pipe in all the same shade of sugar, and when dry dust the centre with a little powdered colour reduced in strength by the addition of cornflour. Be sure there are no particles of colour not reduced, then dust on the colour with a little dry cotton wool. This, of course, is only intended to colour the edges but it is very effective and creates the correct shading.

Snowdrops

Spring is a time of year when even the most insignificant flowers are a pleasure to see, so it is well to take a look at some of them from the point of view of art and decoration. One of the first flowers to appear is the snowdrop, its whiteness so bold against the gloomy skies. These delicate flowers make useful little sprays and although there are only two colours, white with a green stem, to me they always look attractive particularly if piped against a pale pink base.

This is a point that must be studied in flower composition for the flower becomes real and natural if set against the correct background and used at the right season of the year. The flowers, as you know, have a smooth texture and as we look at them three petals only are seen. Therefore this calls for a slightly softer sugar, soft enough to follow the line formation, yet sufficiently firm to hold its shape. Two outside petals are piped with the centre one just merging where each petal comes to a point. A little green sugar is placed at the end where the stem will join.

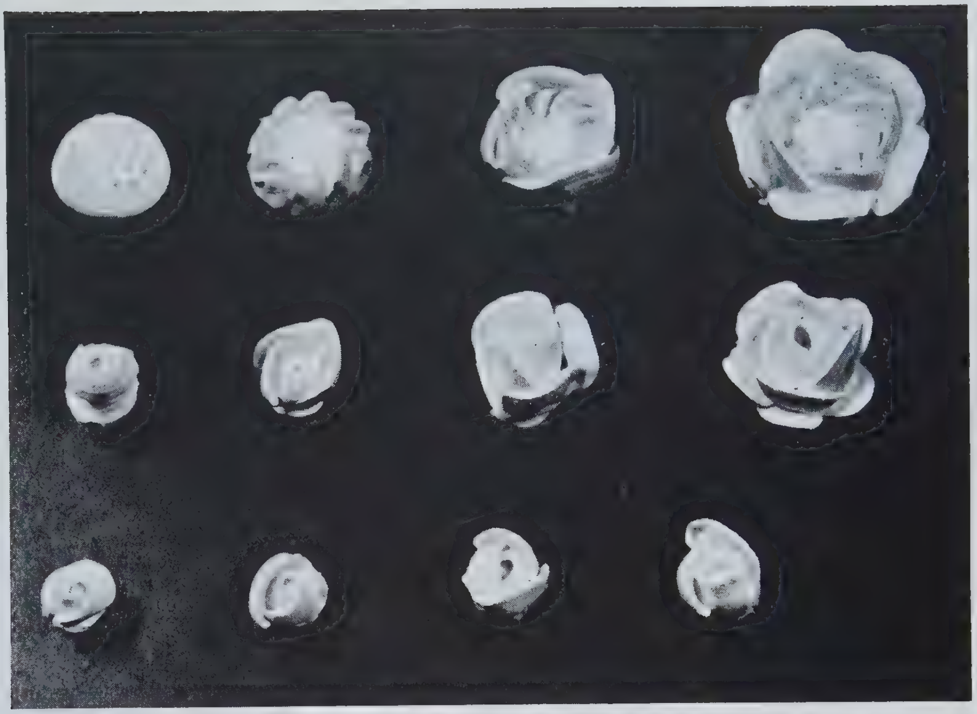


Fig. 18.12 *Various Roses.*

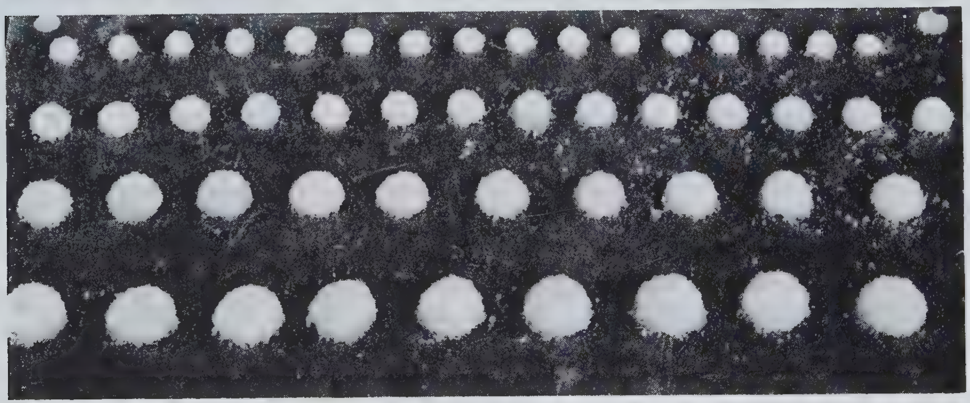


Fig. 18.13 *Rose centres.*

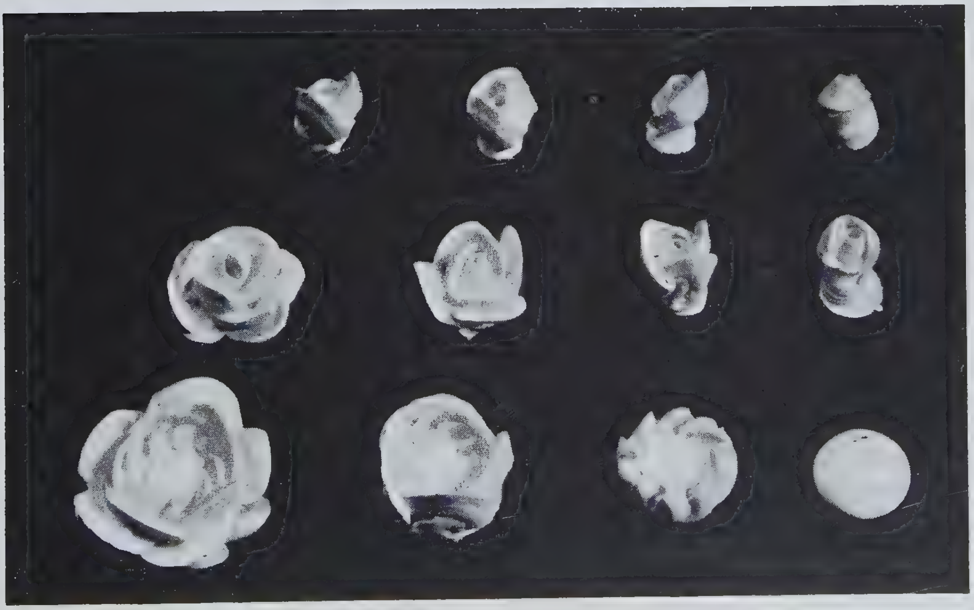


Fig. 18.14 *Piping a Rose stage by stage.*

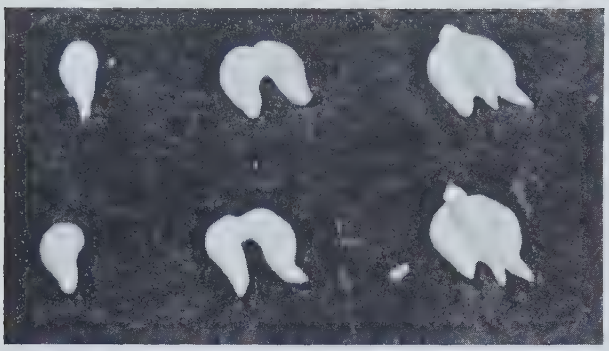


Fig. 18.15 *Snowdrop.*

This little flower can be prepared in advance and placed in position, or piped directly on to the cake, but in so doing make a study of the way it grows – the gentle curve of the stem and leaf to hold the delicate little flower.

To achieve the correct formation in any floral arrangement these are the points that will in the end mean success.

Crocus

This is a flower very easily made and produced very quickly. There are three colours, mauve or mauve and white, and orange, and pink-white and white. With the sugar in two colours, the darker one to the outside, the tube is simply forced up and down very quickly, tapering off the petals as the tube returns, each being in line and of a predetermined size. When dry the petals are secured together and placed in their natural surroundings upon the cake. A bowl of crocuses is most realistic if these sugar petals are made to stand up as if forced through the fibre in the bowl. Miniature varieties are also suitable for facing.

So far the petal tube has been used, but it is surprising the number of floral sprays that are piped with semi or soft sugar, not only piped in sections, dried, and then assembled, but types of flowers that may be piped directly on to the cake. These are perhaps a little modern and lend themselves to improvisation but are quickly executed to give a pleasing effect. Here is where a little ingenuity is well repaid.

Daffodils

The daffodil is one of the flowers that is piped direct on to the cake, and if you desire, a suitable drawing can be made to transfer the idea into practice. The main point is the trumpet; the lighter effect given to the inside must be set against the more definite outside, and there is a gradual tapering to the centre. The petals are then outlined into position and filled in, followed by the stem and one or two slender green leaves. Carefully judge the thickness of the stem against the head of the flower, and the petals lighter in shade.

Tulips

These are flowers that may be quickly piped direct on the cake and there are two variations which I think give a delightful finish. First of all it is preferable to have a medium or large surfaced cake for the best results and to give the correct proportions.

Begin by piping the stem in a circular way around the

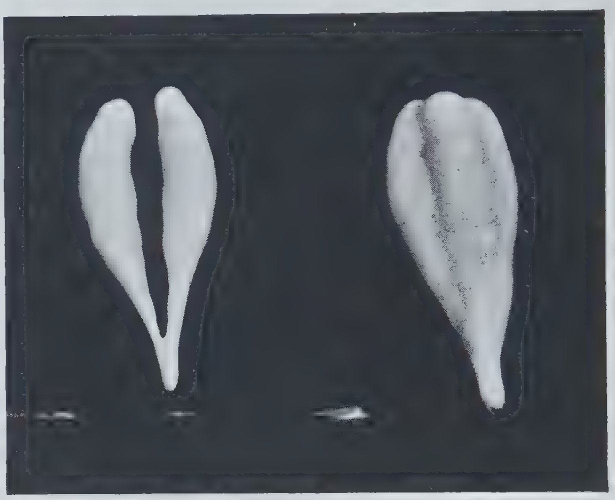


Fig. 18.16 *Piped Crocus.*

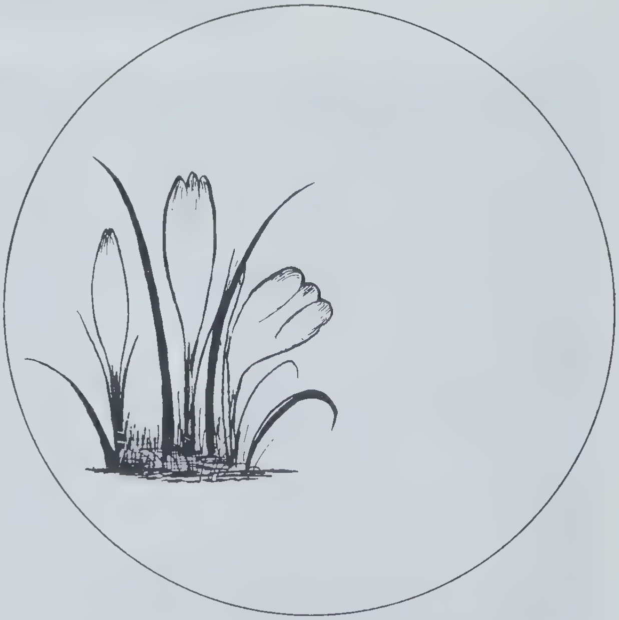


Fig. 18.17 *Crocus.*

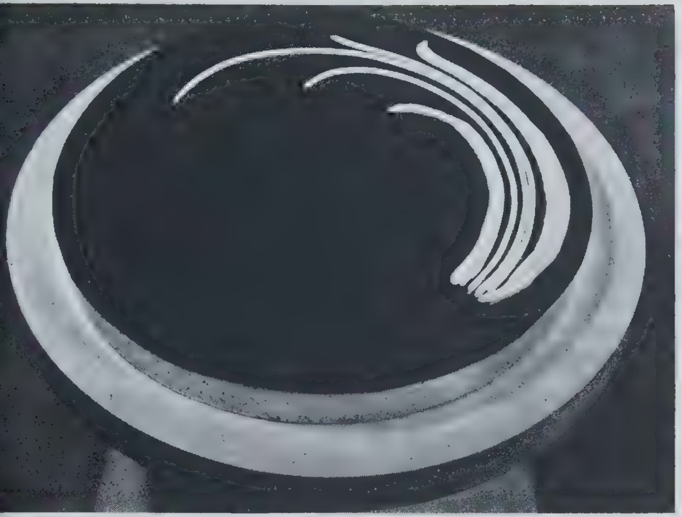


Fig. 18.18 *Piping Tulip stems.*

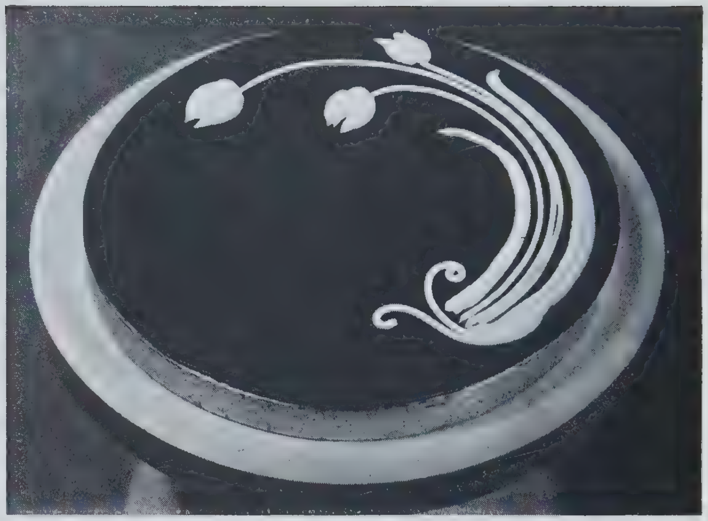


Fig. 18.19 *Piping Tulip leaves.*

perimeter of the cake, this being done in green sugar with a No. 3 tube. The leaves are also piped with the same tube giving a little more pressure to the centre to shape the leaf. Now follow directly against the first leaves and you will see the boldness given to the leaf. The centre vein is further emphasized by drawing a No. 2 paint-brush down the centre which will also give the fine point to the end of the leaf. Repeat the same on the inside, curving the leaf the opposite way. The scroll-like finish at the end of the stems gives the desired effect. The flowers are also piped with a No. 3 tube, either in white and tinted after or by the introduction of two colours.

To pipe the flower the two outside petals come first. Press out the sugar to give a bold centre, tapering down to the end, giving a nice curve at the same time. Next, repeat this operation on the opposite side, and by immersing the tube in the centre and pressing, the three petals are joined and tapered at the end giving the boldness to the centre. The sugar for these flowers needs to be slightly softer but not too soft, and the division of the petals can again be parted with a paint-brush. As the stems are curved with the cake, so the head of the tulip must also conform in various colours growing from a bowl. This just shows the earthy top and the boldness of the bowl is in soft sugar. The bowl may be further decorated when dry, but should be outlined and piped directly on to the cake.

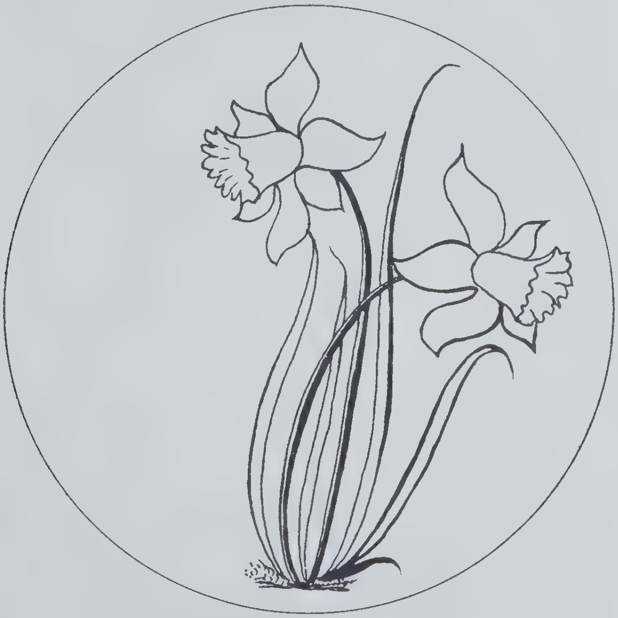


Fig. 18.20 *Daffodils.*

Primroses

This very popular spring flower is made on a rose nail and consists of five petals, each with a cleft. Use pale lemon-coloured sugar for the petal and add a little yellow colour to the centre, then pipe on a pale green dot of sugar. This again is the type of flower one could use for practising and the manipulation of the tube, but at first it will not appear quite so easy to pipe five petals to the circle instead of six.

One point here: be careful this flower is not made too large for the arrangement will be (1) shown in its natural growth, and (2) a bunch of primroses which can be made to look very nice, especially if given the correct position in the decoration of the cake. Similarly, be sure the stems are thin and delicate; beware of piping too thick a line which will look clumsy and out of proportion.

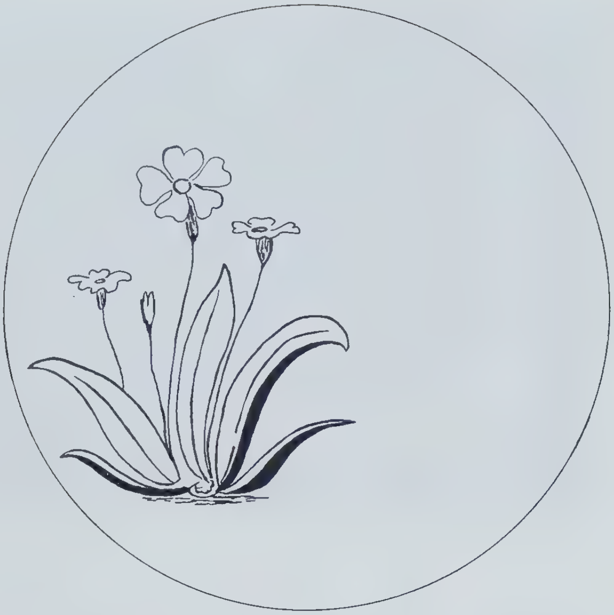


Fig. 18.21 *Primroses.*

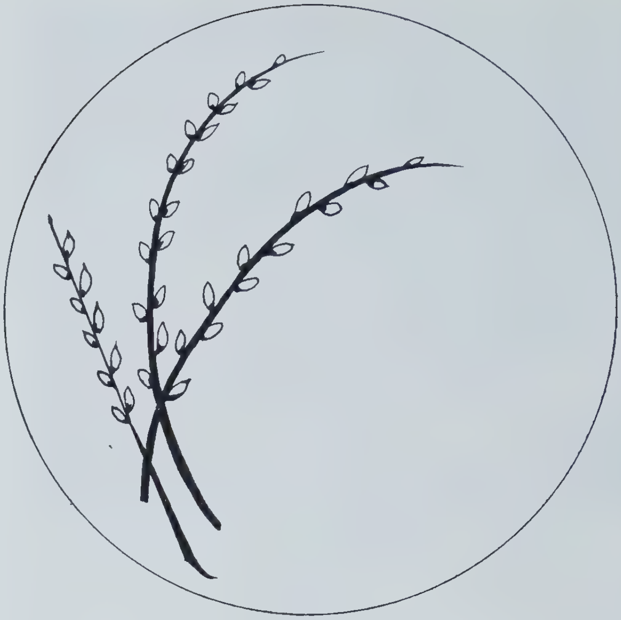


Fig. 18.22 *Palm.*

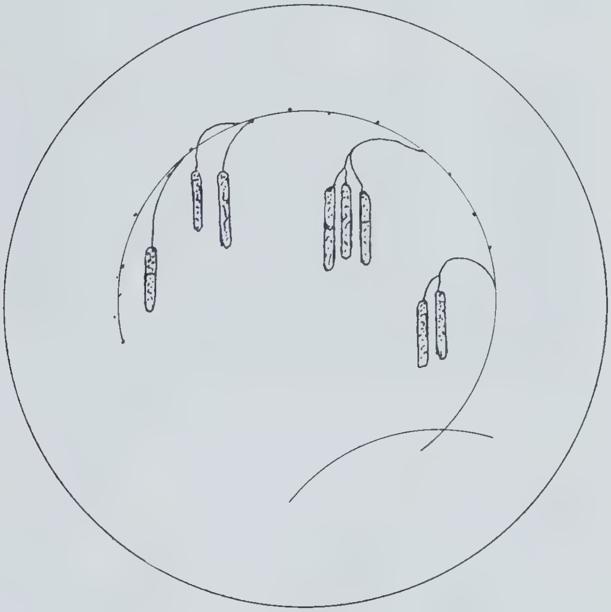


Fig. 18.23 *Catkins.*

Palm and catkins

Sprays of palm also give a seasonal look and are reasonably simple to pipe directly on the cake. The stem is depicted in two colours: chocolate mainly, with a little white down the side, which should always be uppermost thus giving the reflection of light as it is seen. Oval sprays are then added on each side of the stem diminishing at intervals, and at the base of each a little chocolate and green sugar is piped.

Catkins also make an attractive spray. Draw a fine chocolate line, semicircular, round the cake top with smaller stems breaking away at intervals. The catkins are piped vertical to the stem with yellow sugar through a No. 3 tube, but rough or dot the surface to take away the smoothness. This type of spray is useful in that very little work is necessary to cover a good deal of space.

The production of flowers is as a rule confined to the use of various sizes in petal tubes. Today we are able to make many varieties, some are authentic some call for improvisation yet all have their own decorative features. Flowers of this description are made in soft or semi-soft sugar and can either be prepared beforehand or piped directly on to the cake, but to do this a certain amount of skill is needed.

In planning such decorations, the plant and its natural growth should be taken into consideration, for the flowers are more effective if they are given the correct setting, which must also be suitable to decorate the cake top.

Fuchsias

First the fuchsia, with its splendid colour contrast and delicate shade of green foliage, each flower or bud poised at the end of a minute stalk, calls for a more advanced form of decorative piping. As with tulips, the ideal spray will be semicircular thus allowing the flowers to be suspended as desired. Leaves are placed between the flowers, springing from the same branch to make a compact and neat decoration. The flowers are made with semi-soft sugar, that is to say the petals are piped without an outline, and the four upper petals are usually the darkest in colour, either red or mauve with a pale pink cup. The stamens protrude from the cup which also has four petals, each closely overlapping the other. The leaves or foliage are elongated and pointed with a definite indentation down the centre, and the base of the leaf owing to its growth shows the greatest density of colour.

With the semicircular spray you will with some experience be surprised at the many variations of flower arrangement that are possible. Illustration No. 18.24 is but one example of how a nondescript flower is incorporated into the design, and its value and positioning are relative to whatever inscription is desired. Note how a miniature spray corresponds on the side of the cake.

Lilac

Based on the same branch formation as the fuchsia, each spray of lilac is depicted with dots of coloured sugar. The actual flower is made in the form of a bell, the top of which opens into four petals with the lighter centre deep in the base. The number of flowers in a single cluster is so great that one cannot be isolated, so we simply indicate the shape of the cluster by a series of dots at irregular intervals, thus showing how the light in places percolates through.

Fruit blossom

Sprays of blossom are always excellent alternatives at the right season, for their delicate colours create a fresh spring-like appearance. In making up flower sprays first study the growth of the branch then apply the flowers to fit the cake decoration. For instance with almond blossom, the flowers are in clusters along the branch, but it is not necessary to do exactly this. The petal formation of the flower should be singled out to meet the design. Most fruit blossoms have five petals, shaped somewhat differently yet mainly of the same pinky shade. Some are a deeper pink, either on the underside or on the edges of the petal, so you will see the amount of latitude one has to evolve a suitable decora-

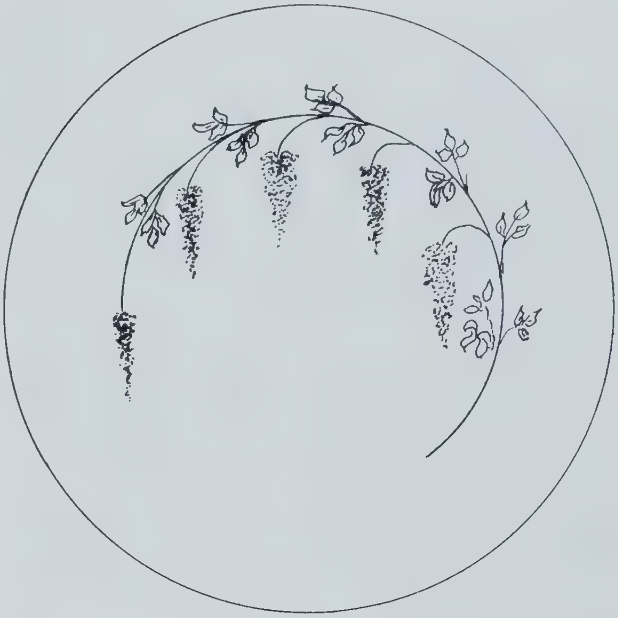


Fig. 18.25 *Lilac.*

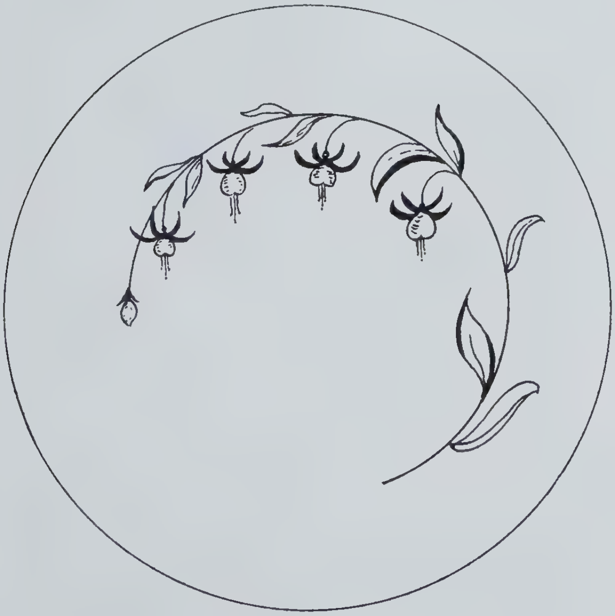


Fig. 18.24 *Fuchsia.*

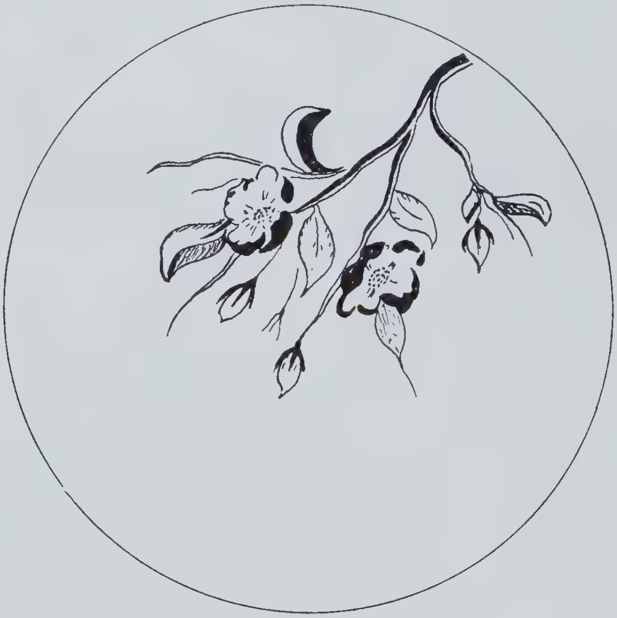


Fig. 18.26 *Blossom.*

tive spray. Cherry blossom is either white or a much deeper pink; the flowers hang in clusters and can be coupled with the grassy brown foliage. Apple blossom again is very pale on the inner side with a slightly yellow centre, the outer edge and underside a deeper pink. It is cup-shaped with rounded petals, and set against the deeper colour of the branch.

In decoration, the branch or woody part should be carried out with chocolate icing rather deep in shade, and in some instances a little white or pale green can be used down one side of the tube to give a rounded effect to the branch. When piping the branches, notice that they do not always take on a gradual curve but appear uneven and jagged, and the thickness is reduced until the ends are very fine. It is important that, to create the best possible effect, the smaller branches should be reduced, particularly the more distant ones. The main stems are piped with a No. 1 tube, the smaller with No. 0.

Wild rose

The wild rose is in many respects similar to the blossom just described, but usually the flower is seen quite open with a bud above closely shielded by rose leaves. This makes quite a good individual spray with the slightly indented petals, again in two shades of pink with a tinge of yellow in the centre.

Flowers such as these, as well as being piped directly on to the cake, can be piped in single petals with two coloured sugars, and even set on a curved shape to dry which produces that nice cup shape when they are assembled. The centres are also done separately and shaded with yellow upon which fine pale green dots are piped. Sugar should never be too thickly applied when a flower is made petal by petal, or the lightness and delicate formation will be lost.

On many occasions flowers have been made into a spray to fill a particular section of the cake top. Composed of five petals only, they are irregular in shape yet form themselves into a circle. The outline is piped and then filled with sugar – pale pink, yellow, or cream with a flash of deeper colour for the centre upon which a pre-piped centre is fixed. The effect is brought about by the irregular edge, but try to keep the flower within a circle otherwise it will appear one-sided.

Another variation is a side view, the petals top and bottom extended with the side petals reduced, and so by varying the petal formation you portray the flower at different angles.

19 *Figure Craft: Birds*

The reproduction of sugar-piped figures, artistically designed in their many varied forms, affords numerous opportunities for the modern decorator. As one becomes further acquainted with the primary stages, this work never ceases to interest and inspire. Imaginative ability, coupled with creative modes or positional changes of the subject, could well be the foundation of successful figure craft. To meet a customer's own particular requirements, piped figures such as birds, animals, or even scenes from any of our great sporting activities, bring not only a sense of achievement to the decorator, but also a delighted and very satisfied customer.

Blue tits

Many varieties of English birds may be used in some way or other as a seasonal decoration, but for our purpose it is proposed to deal with some of the more popular and perhaps most colourful among them. One of the busiest little birds is the blue tit, a certain visitant to any garden. Fig. 236 shows these lively little birds perched on a branch, giving some idea of a suitable position in which to fix them on the top of a cake.

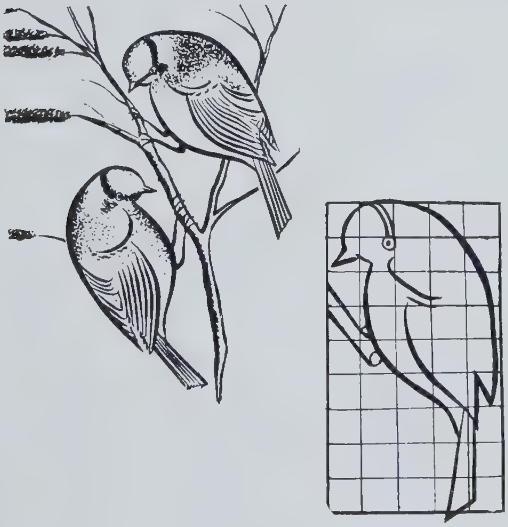


Fig. 19.1 *Blue tits perched on a branch.*

DRAWING A TIT

How to sketch the bird is shown in Fig. 19.1 and it will be seen that it is composed in a rectangle $2\frac{1}{4} \times 1\frac{1}{4}$ ins. and divided into $\frac{1}{4}$ in. squares. The position and proportions of various sections of the bird can now be drawn in and once this is done various positional changes can be effected.

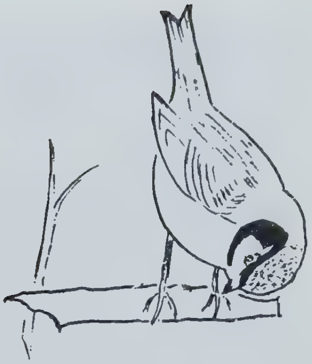


Fig. 19.2 *Sketch of Blue Tit.*

Looking back at Fig. 19.1, the bird on the top of the branch is simply reversed to become the one on the under-branch. If desired, any suitable floral arrangement can be sketched in to fill the position of one's choice.

The colouring of these birds is mainly a combination of blue and yellow. The head or cap is in dark blue, using an even darker shade to mark the eye. The blue is gradually mingled with yellow to give a greeny-yellow hue to the wing and tail. The breast is also of a yellowish green, the predominant tinge being yellow.

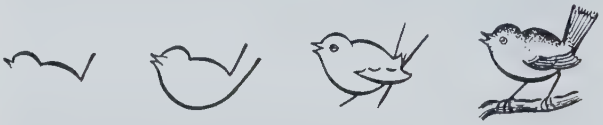


Fig. 19.3 *Chaffinch, stage by stage.*

Chaffinches

Chaffinches are also popular everyday visitors and are easily distinguishable by their colouring. The breast of the cock is usually a sombre rust-red with blue-green for the head, softening to various shades of brown for the wings, while the hen is a quieter greenish-brown. In most varieties of finches the wings have a bar or splash of white which tends to give that distinction to the species. The chaffinch, a chirpy little bird, is featured through the various stages of drawing to show one of its many typical positions. Commence with the outline for head and back, which also gives the point of the beak. The angle of the tail can be varied to suit the attitude, while the outline of the breast can be carried along to the tail formation. The position of the legs will also vary accordingly; then the wings and tail complete the bird. To perch them on a branch may be sufficient, but this can also be extensively elaborated.

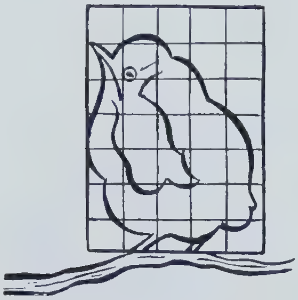


Fig. 19.4 *Diagram of fledgling.*

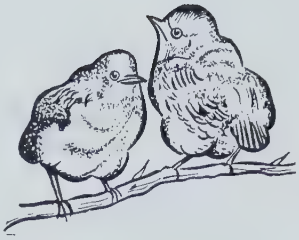


Fig. 19.5 *Baby birds.*

DRAWING BABY BIRDS

Baby birds seen resting on a bough beside their nest are a good subject. Although Fig. 239 shows two distinct fledglings on a bough, it is primarily intended to show the position and the markings. The composition of such a picture, however, could easily be assembled from Fig. 240 which explains how this type of bird can be drawn from a diagram.

A rectangle, $1\frac{3}{4} \times 1\frac{1}{4}$ ins., is divided into $\frac{1}{4}$ in. squares to give the various positions. Notice how the bough is also attached to the baseline, its length and angle as desired, and how this outline can be either duplicated or reversed two or even three times to make up several varying compositions. To colour birds at this stage of life: the downy backs are usually a mixture of browns, and the breasts a pale almost creamy colour with darker markings here and there.

Kingfisher

Though not so commonly met with, the kingfisher is one of the most attractive and colourful of our English birds and cannot be excluded, for its whole environment is so different and, moreover, the compactness of the bird itself is particularly suitable for our decorative purposes. The vivid greenish-blue of the head and back contrasts sharply with the chestnut plumage of the breast, while its long beak and short tail are most prominent features. Fig. 241 shows this bird in its natural surroundings, and has been designed as simply as possible.

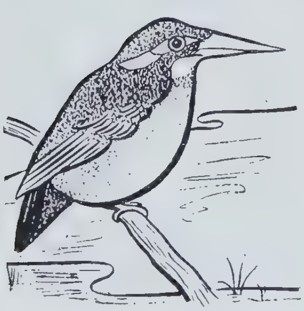


Fig. 19.6 *King fisher.*

Robins

I feel we must stress the advantage of first studying a drawing or make-up of a robin. This must create a mental picture from which to develop the more commercial possibilities of the bird. The robin is to be seen in many attitudes but its positional changes are quick, although perhaps not so frequent as in some other species of birds.

For the first sketch I have selected a robin with some of its natural characteristics, notably the shyness is expressed, but the bird remains as perky as one would find. The first illustration is simply a constructive diagram as a drawing aid. Based on a rectangle $2\frac{1}{2} \times 1\frac{3}{4}$ ins. and then sub-divided into $\frac{1}{2}$ in. lengthwise, this is sufficient to give a clear indication of the respective positions of the various sections. A gives the position of the tail, B, the tip of the wing, while the lines connecting B to the base, at D and E, that of the legs. This is a most important point for, as with most birds, their natural habit of perching shows one leg at an angle to the other. Therefore, if these lines be joined in this manner it will be much easier to obtain these respective positions. Line E also shows the eye positioned directly behind the beak.

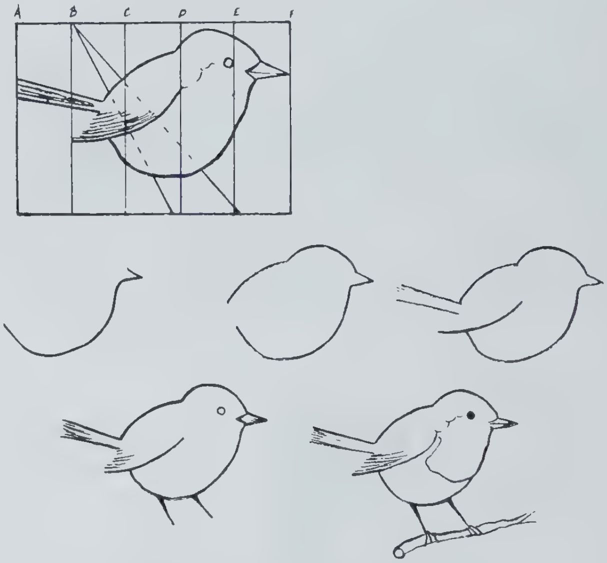
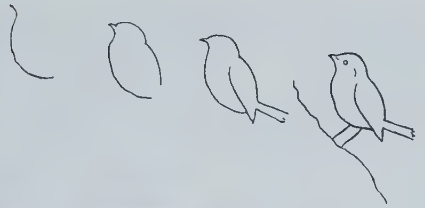


Fig. 19.7 *Diagram of Robin.*

The second illustration now shows the actual manner in which the robin can be drawn. This gives its make-up in five stages, the last of which shows the approximate patch of red on the breast. Accessories such as holly



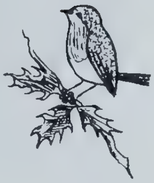


Fig. 19.9 *Robin on Holly branch.*

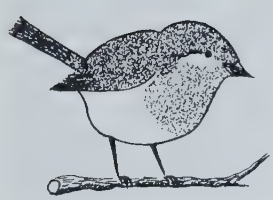


Fig. 19.8 *Make-up of Robin.*

branches, etc., can now be added to give the finished picture as illustrated. One point here should be carefully noted: the eye, which could easily make or mar our bird, is composed of a circle of dark colour within a circle of light, while in the centre a white speck suggests the sharpness of the bird coupled with its length of vision, thus creating as realistic a figure as possible.

Perhaps this particular robin appears somewhat chubby, yet fully alert, typical of this species in winter, and while intended primarily for the development of our own idea, it could be a most useful inclusion for a Christmas top. A figure of this size would obviously be best prepared as a run-out either in white or a combination of light chocolate colour for the wings, tail, and beak, and white sugar for the breast. This will allow for the reddish colour to be added when dry. Darker shades can be added at a later stage. The legs, so fragile in comparison with the body, would be best piped in when the robin has been placed in its final setting. Although the next illustration of a similar bird is drawn on the same lines as before, it does show a slight positional change and is probably more suitable for inclusion in a side panel, yet would be sufficient for even the top of a smaller cake.

PIPING BIRDS COMMERCIALLY

We have so far dealt mainly with the outline but we must now review the possibilities of piping in sugar and its commercial application. Direct piping of such birds on to waxed papers is done on a smaller scale, yet when grouped together the birds can be most effective. The piping sugar for this work should be well beaten and light, but must remain firm when piped. Fresh beaten sugar is also quite suitable.

Three movements with a No. 4 tube constitute the build-up of our first robin. First pipe a good bold bulb of sugar, gradually tapering the tail at an angle away from the body. At the commencement of the tail the tube should be held at an angle and drawn sharply outwards, while still touching the waxed paper. With practice, variations in thickness and length will be achieved and this is but one of the features that will portray the actions of this perky little bird. The head is next piped by inserting the point of the tube in the top of the body. Pressure is now accentuated as the tube is lifted to make a smaller bulb, drawing sharply away in a left-hand direction to form the beak.

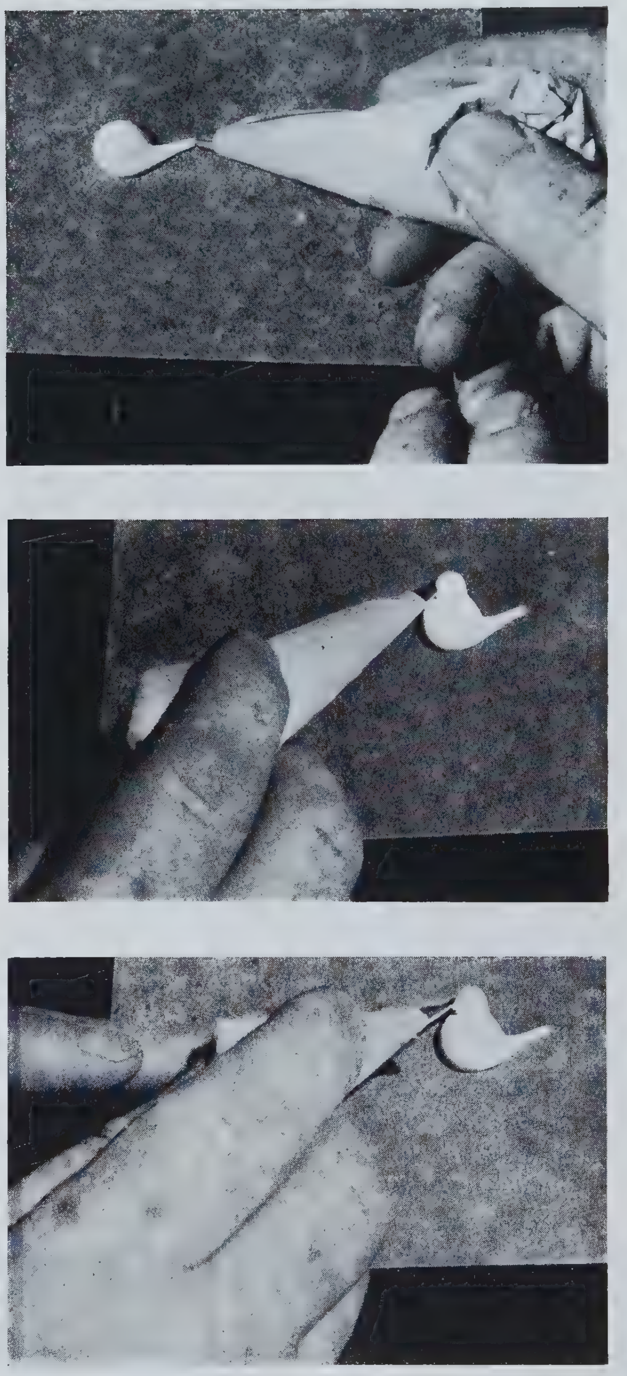


Fig. 19.10 *Piping a Robin.*

These figures can be piped repetitively in rows at regular intervals, each bird being piped to a finish before the next is commenced. In a similar manner it is essential to learn to pipe these birds in the opposite direction, for this will need more practice, particularly for a right-handed person. The birds are then left to dry and are then coloured ready for use. As has been explained, the centre of the eye is shown as a white speck, and for this reason the eye is piped in position with sugar after being coloured.

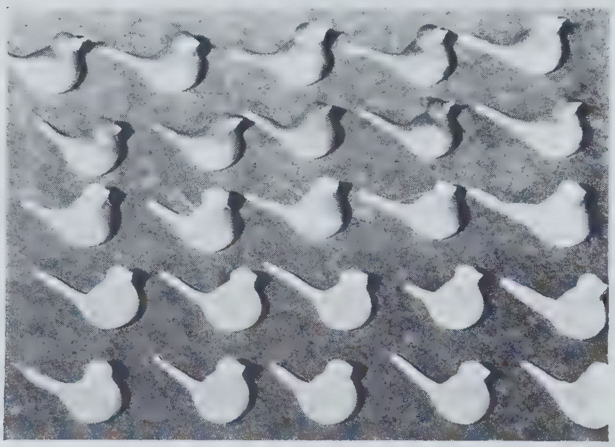


Fig. 19.11 *Rows of Robins.*

COLOURING

Perhaps at this juncture it would be an advantage to give some details of colour. The best effects are obtained by the use of a spray gun, but for those who are not so fortunate let us consider our everyday colours. First brush a little colour on the red breast. A suitable tan is made by adding a little french pink and a spot of lemon yellow to a little carmine powder. The yellow colour will produce a softer blend while the french pink will add brightness. By adding a little more of one or the other colour it will be possible to obtain the true colour. These colours mixed with carmine powder produce a fairly clear mixture and this should be brushed lightly in order to effect a gradual shading, thereby leaving the base of the breast a natural white. The colouring for the main body, tail, and head is made from a combination of chocolate, brown, and white; when toned with a little yellow and brightened with a little french pink, this gives the natural colour. The proportion of the various colours must be ascertained purely by experiment, but practice will ensure success.

The colour is put on with a fairly dry brush which must be applied down the back of the figure first. It will be seen that by using this method the shading of the wings comes with the natural flow of the brush. The eye is then piped in white and a little emphasis given to the beak to complete the figure. These birds can be prepared in advance and assembled along with fir cones, holly, and various decorations to form many attractive scenes.

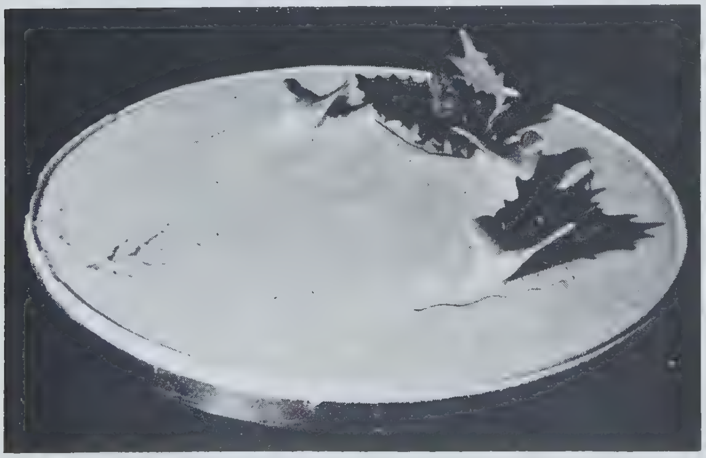


Fig. 19.12 *Robin and Holly.*

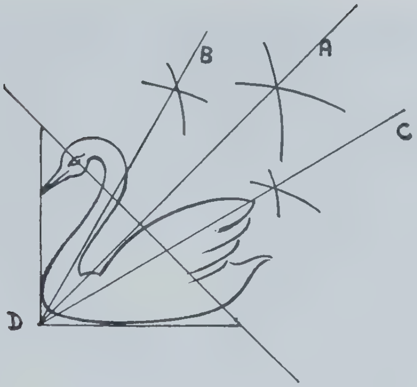


Fig. 19.13 *Drawing Swans.*

Swans

As will be seen in the illustration, a simple drawing of a swan is briefly sketched in a square. In order to help in obtaining the correct curve of the neck and wing, a line drawn diagonally across the square is bisected and joined to point D. Each division is then sub-divided and the lines B and C drawn to meet at D. A drawing of this description makes it easier to obtain the correct line or curve.

We can now turn our thoughts to creating a scene. This will primarily depend upon the available space or panel, for one bird can be used or two or more birds can be suitably grouped together. Very little embellishment is needed for such a scene, only water and a few reeds are required to set the swans in their natural habitat.

The swan shown provides the best example of our decorative work and can be suitably adjusted to meet any particular requirement. For instance, it would be

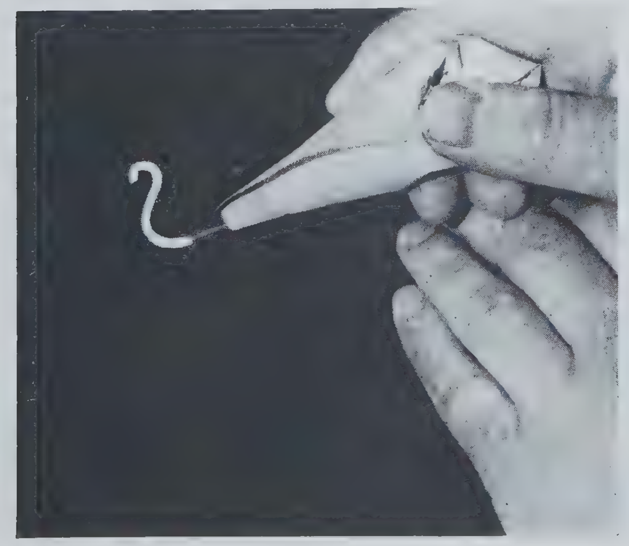


Fig. 19.14.

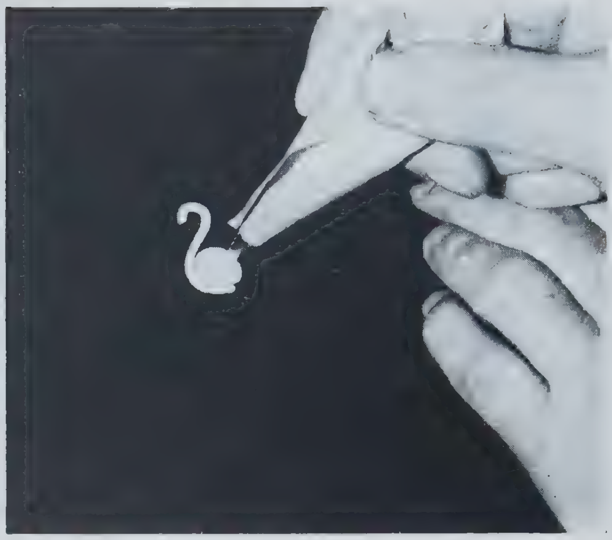


Fig. 19.15.

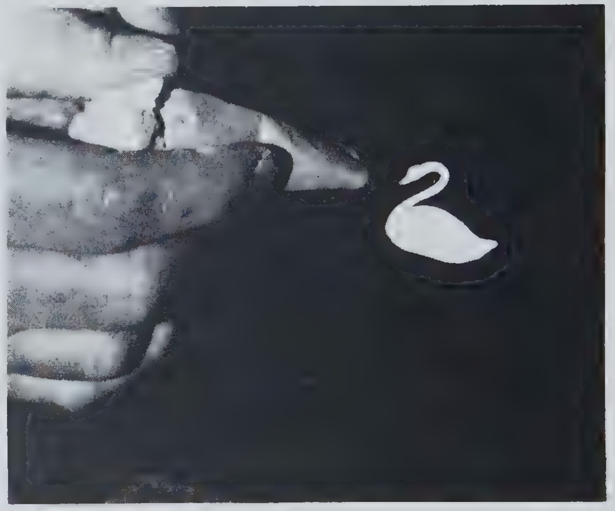


Fig. 19.16.

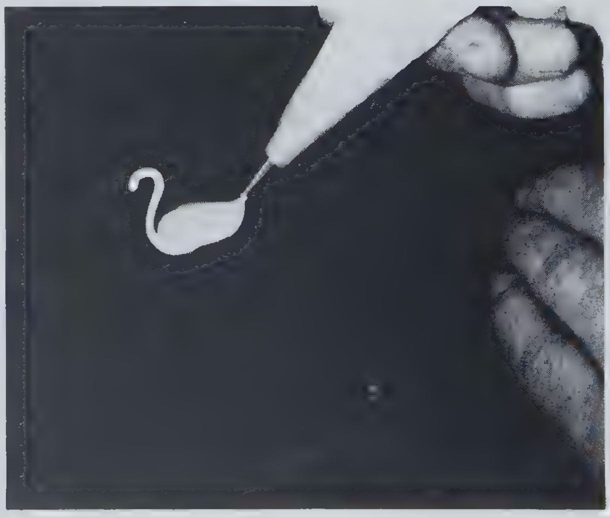


Fig. 19.14 to 17 *Piping a Swan.*

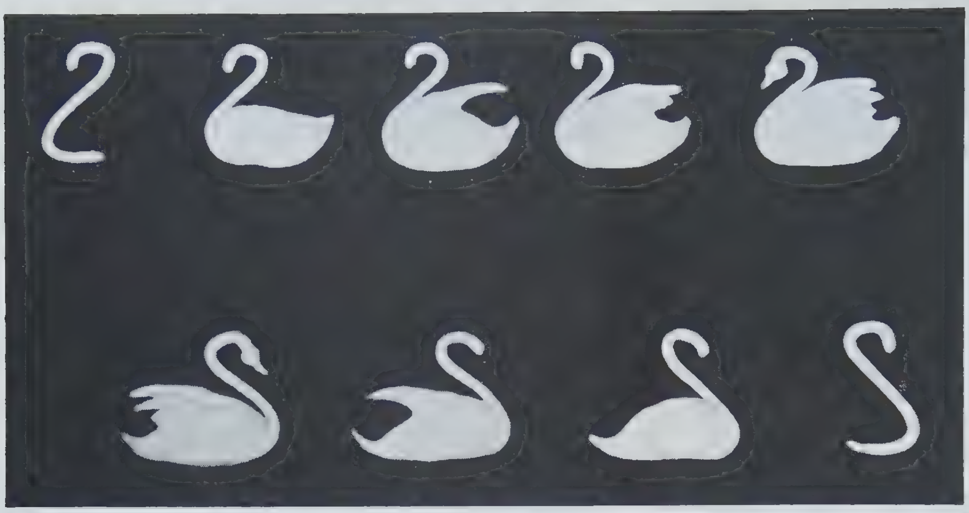


Fig. 19.18 *Stages in piping a Swan, right and left.*

fairly easy to open the wings as a swan does in order to show off its plumage, or alternatively to close the wings to the shape of the body so often seen as the bird moves gracefully on the water. If the swan is not too distant and the water fairly clear, it would be quite easy to see the webbed feet paddling through the water, a detail that could be included in a picture or drawing although not necessarily required in the course of producing a sugar swan.

Methods of Piping

In the accompanying illustrations the swan's build-up in four stages is shown. The icing used was beaten up and allowed to stand overnight. It was well stirred before using, so that it piped a good, clean line. A No. 3 tube was chosen and we commenced by piping the neck. The body was then piped with the same tube, the sugar being forced into the bend of the neck before being moved away to shape the body. It was finished by reducing the pressure on an upward movement to complete the tail. The head and beak were piped with a No. 2 tube, the beak lightly drawn away after the head had been shaped. In this manner the swan's graceful curves were maintained.

A swan showing its wing feathers was begun in the same way, but in piping the wing the tube was first immersed in the body before the upward pressure to fashion the wing. This was done three times to complete the wing. To make the wing appear as part of the body, the sugar in this instance was slightly reduced in consistency to give a smoother complete figure.

The above two methods form the basis from which all swans are piped, although slight alterations can be made if desired. The neck, though piped in one uniform line, can be made thicker where it meets the body for in some of the swan's attitudes this is most apparent. The wing feathers could be over-piped to give more emphasis, and while the beak appears to be a light continuation of the head, it could be added in the natural orange colour. Very little colour is required for a swan. Apart from the orange beak and black legs and feet, there is a

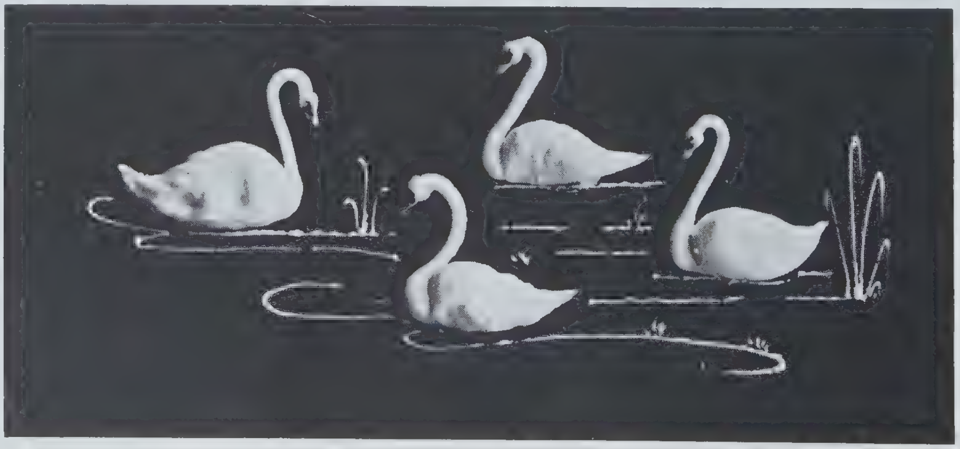


Fig. 19.19 *Swans in formation.*

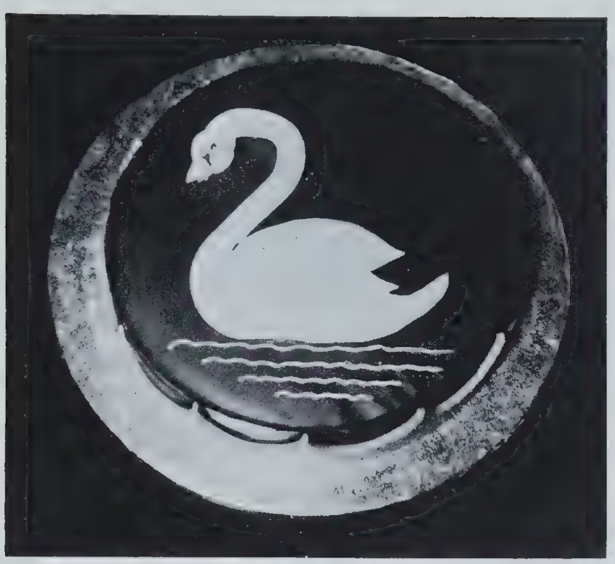


Fig. 19.20 *Finished cake top.*

little black plumage directly above the beak moving backwards to the point of the eye, which can also be added in colour. Alteration in size is made by varying the size of the tubes, finally finishing with the small cygnets.

Domestic birds

For our next study let our selection be a cockerel, for perhaps he is the most prominent of all.

DRAWING A COCKEREL

Commence with the main lines and curves as in Stage 1, and once this has been drawn correctly Stage 2 may be added and then completed as in Stage 3. These are three easy stages in which to draw the bird, but even this may be still further simplified by using the graph, which measures $1\frac{1}{2}$ ins. at the base and is 2 ins. high. The rectangle is now subdivided into $\frac{1}{4}$ in. squares, after which the general outline can be sketched as shown.

Fig. 19.21 *Cockerel.*

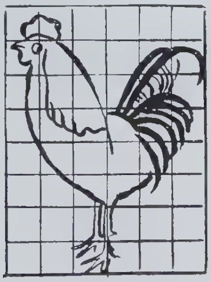
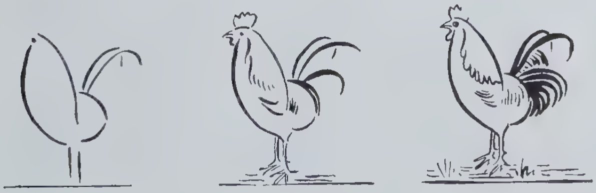


Fig. 19.22 *Three make-up drawings.*



Apart from drawing, the bird can be produced as a run-out and the tail feathers piped before allowing to dry, and coloured as desired. Two of the most handsome cockerels are the Light Sussex, the major part of which is white, with dark tail feathers and the usual red comb and wattles, and the Rhode Island Red, possibly the most popular. Its rich brown colour and tail intermingled with darker shades of green and brown, with legs in yellow, create a striking contrast. Piped and coloured figures show to advantage when set against a little grassy green here and there, and wisps of straw.

GEESE

In a similar way, the outline of the goose is now illustrated and can also be drawn by means of a graph, which in this case is identical in measurement to that of the cockerel. Here again, the bird can be made by means of a run-out and coloured afterwards. This variety is white with the tail and wing feathers touched with chocolate colour and the beak and legs are yellow. A light tinge of tawny brown may also be introduced into the body feathers of geese. Although these figures with a little embellishment are sufficient for decorating, the next illustration shows geese in a more active state as if moving towards a nearby pool, always looking for something to pick up on the way. This tends to give greater realism and certainly looks more interesting.

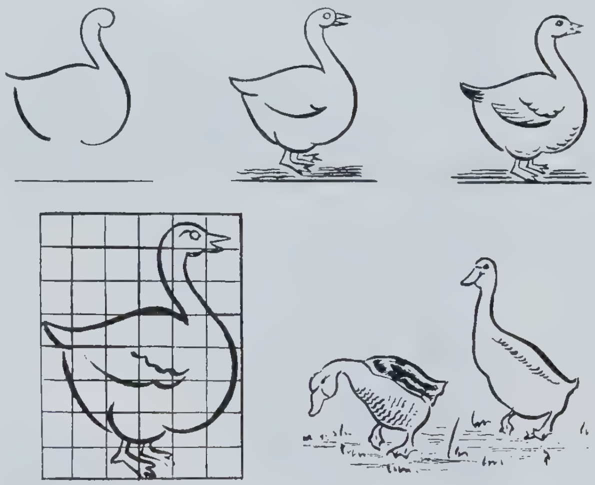


Fig. 19.23 *Geese.*

TO PIPE CHICKENS

In this type of work it is important not to allow the icing to become too light, as large air bubbles develop

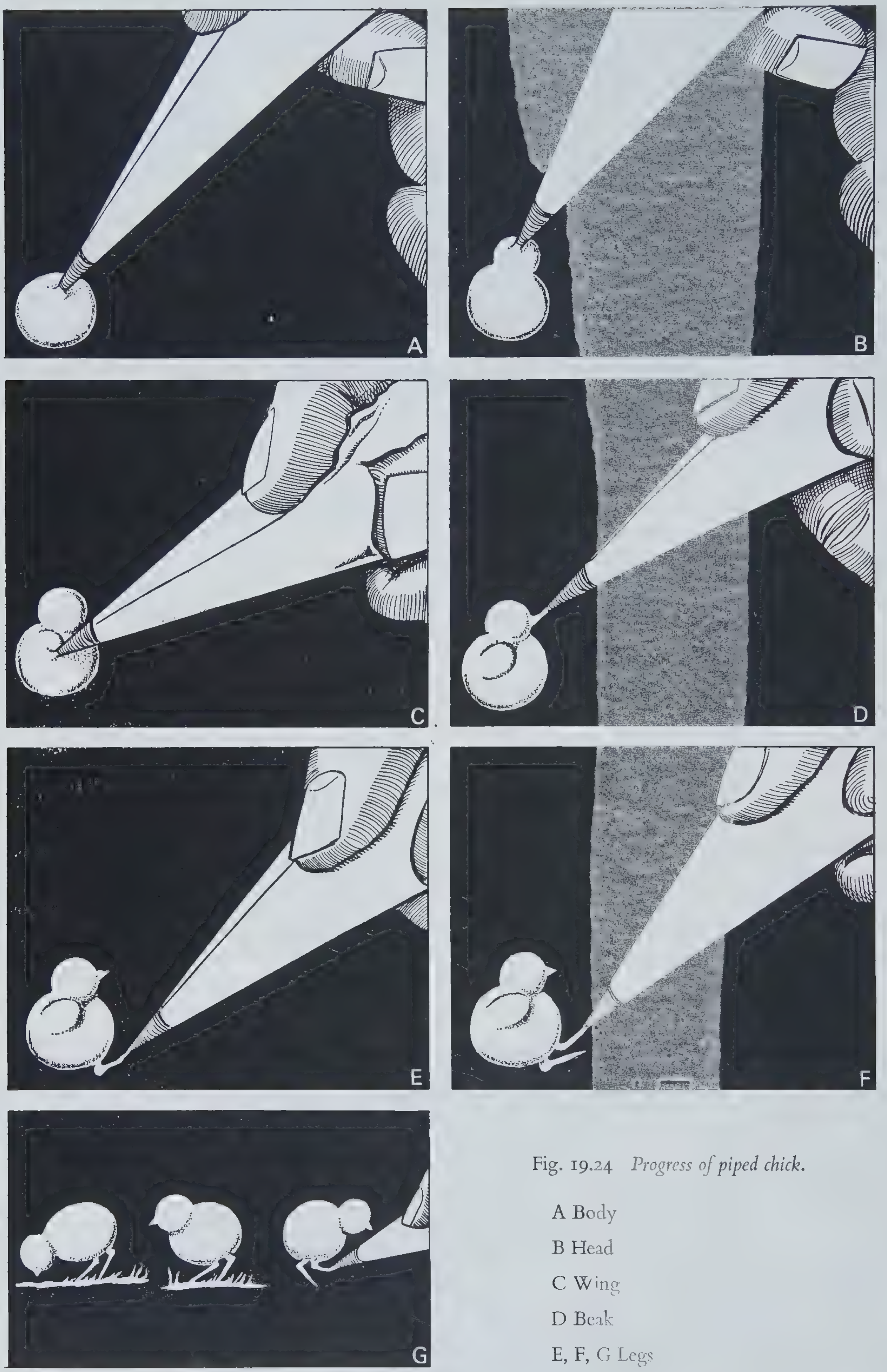


Fig. 19.24 *Progress of piped chick.*

A Body
B Head
C Wing
D Beak
E, F, G Legs

and burst during piping, thus leaving rough edges which spoil the shapes.

Consistency of the sugar mix is also most important, as on this depends the pressure to be used, which ultimately determines the strength of each limb. Again pressure is related to the size of the piping tubes to be used. Plain tubes Nos. 0, 1, 2, and 3 give a very good range for this work, but remember that as the size of the tube increases there will be a corresponding increase in the size of the piped figure, thereby ensuring the right pressure for the size of the figure being piped. On no account try to pipe a large figure with a smaller tube, for excessive pressure will result in uneven piping and loss of control. The student will find this borne out by practice.

For our first example let us study the piping of a small half-relief chick. Briefly, this can be divided into five separate pipings: (A) body, (B) head, (C) wing, (D) beak, and (E, F, G) legs. A No. 3 tube is most suitable for the preliminary stages as it enables us to assess the amount of pressure required for a medium-sized figure.

Pipe a bulb of pale yellow sugar for the body, holding the tube in an upright position. Gradually move the tube, while still pressing, to the left and bring it round with a circular movement, finishing at the point where the head will join. During this operation the tube is held away from the wax-paper so that a good bold body is formed. In a similar way, with the same tube, pipe the head to join on to the body, finishing at the point where the beak will be piped. Bear in mind that the proportion of the head is approximately one-third of the body.

Here we are dealing with a very young chick, and all we need for the wing is a simple scroll-like piping on the side of the chick. Alternatively, a similar marking could be made with the end of a paint-brush and a little chocolate colour, although this must be carried out after drying is completed. With a No. 1 tube a small bulb of orange-coloured sugar is piped against the head and pulled sharply away, giving a good, pointed beak. Lastly, the legs are added to the chick, using the same coloured sugar.

When dry, a tiny bulb, made with a No. 1 tube, is placed on the side of the head for the eye, preferably in a pale chocolate colour. Examples of various sizes are shown to illustrate the use of different tubes.

Another type of chick, equally suitable for commercial purposes, is made by reducing the sugar slightly to a semi-soft consistency, just enough for the sugar to lose any markings, yet be firm enough to hold its own shape. By this means larger figures can be piped and with the addition of beak, eye, and legs, plus a touch of chocolate colour to suggest a wing, the chick is speedily completed. Figures of this description can be prepared in advance. Although the finished chickens have been shown, all the above examples are best left prepared at the body and head stage, after which they may be fitted into any particular decoration. Once the body is in position it will then be found more effective to add legs, etc., while completing the remainder of the decorative scene. We have seen that the basis of a piped chick is the two main sugar bulbs, but in order to give the beginner a further knowledge or better background for development let us take for example two circles.

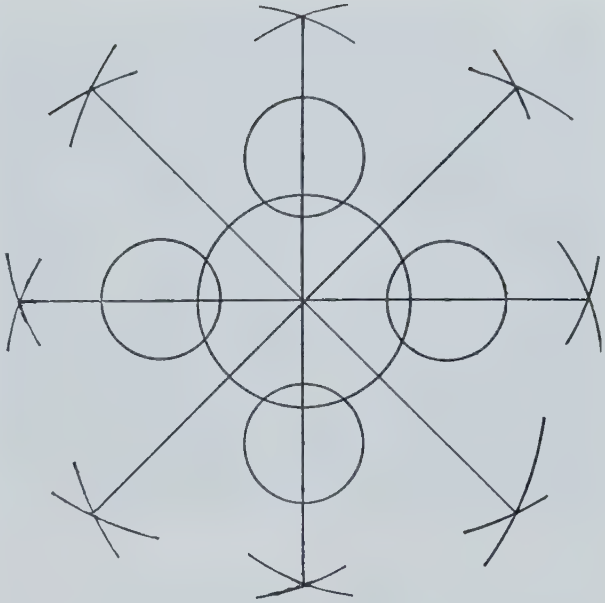


Fig. 19.25 *Drawing Chick by circles.*

Drawing with Circles

First draw a circle, this particular one being 1 in. in diameter, and bisect it into eight equal divisions. On each line at a point 7/10 in. from the centre inscribe a circle of 3/10 in. radius. It will be noticed that by adding a smaller circle at various angles, overlapping the larger circle, any amount of positional changes are made.

From this illustration one single position has been extracted, and using the same method the head is divided into eight sections. The beak is added to the head at the point where the line bisects the circle relative to the chick's position. In an older chicken a tail begins to develop, and our illustration now shows the tail and legs in proportion to the head and beak. With a little groundwork the chick is portrayed in one of its natural poses. It is a combination of this drawing, plus the use of semi-soft sugar, that has been used to pipe the chicks in three positions.

As the chick develops in life, so the use of the wings comes into our picture. The illustration shows this to advantage, but, as an alternative, a lively figure of this description could be attractive and unusual. Having noted or practised the drawing, the reader will find this a great aid to subsequent sugar piping.

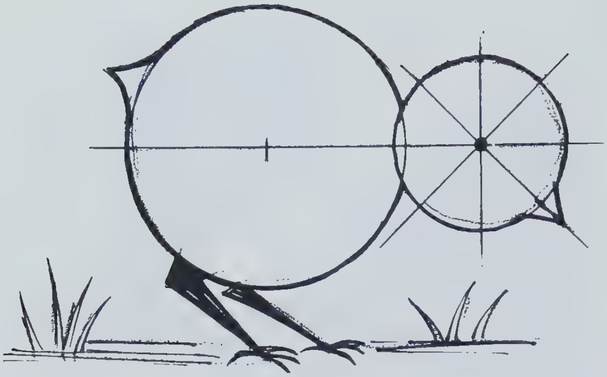


Fig. 19.26 *One position.*

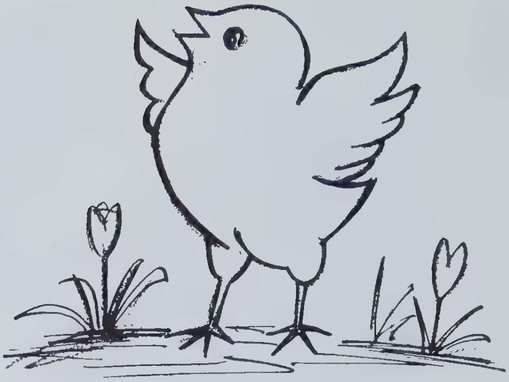


Fig. 19.27 *Older Chick.*

Our English bird life is a most fascinating study, and what better subject could we have on which to focus our thoughts when considering sugar decorations?

Doves

Many lovely scenes can be made with birds, especially if we try to incorporate some of the natural background, say, the branch of a tree with its profusion of blossoms, or even a small twig with a leaf here and there. These are only two of an endless number of variations which may well fit into our creation. We have a variety of birds from which to choose, just as we have many varied ways of piping a bird. First, there is what may be termed direct piping, that is, piping the bird directly on the cake. Secondly we may prepare the wings and tail separately and, when dry, transfer and fix them to the main body. Thirdly, our piping may take the form of a run-out.

Whatever bird we have in mind can be produced by any of these methods. The first method is most effective in building up the side panels of a wedding cake. Probably one of the most commonly used species in the decoration of the wedding cake is the white dove, the symbol of peace. In preparing a sugar bird I shall

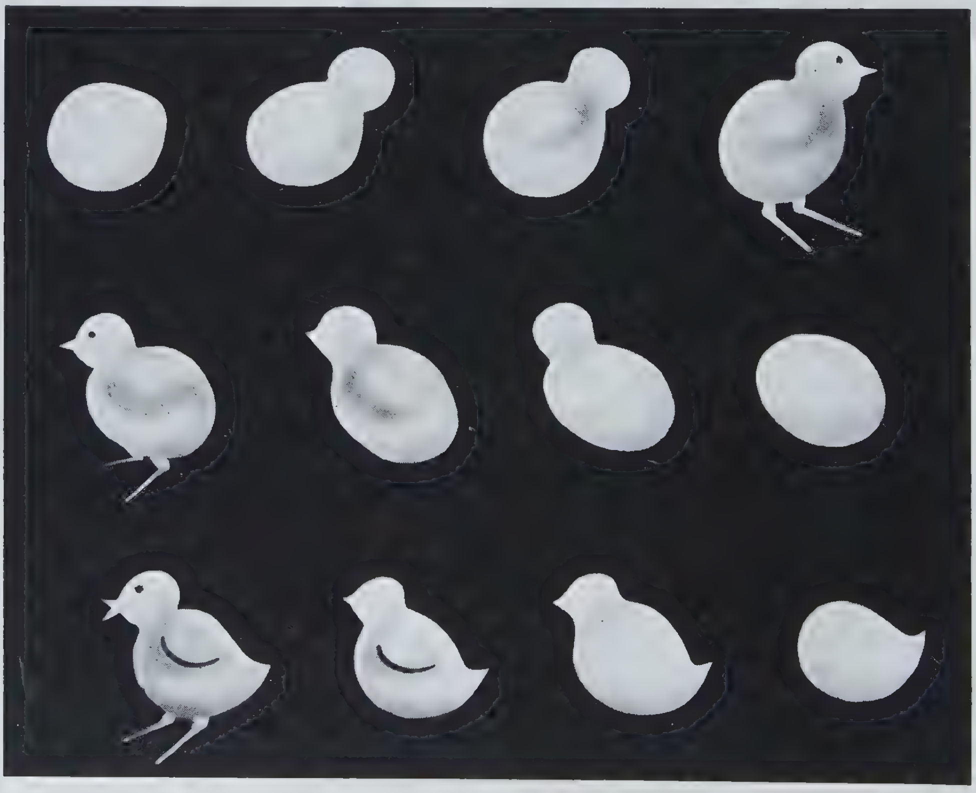


Fig. 19.28 *Piping in rows, stages.*

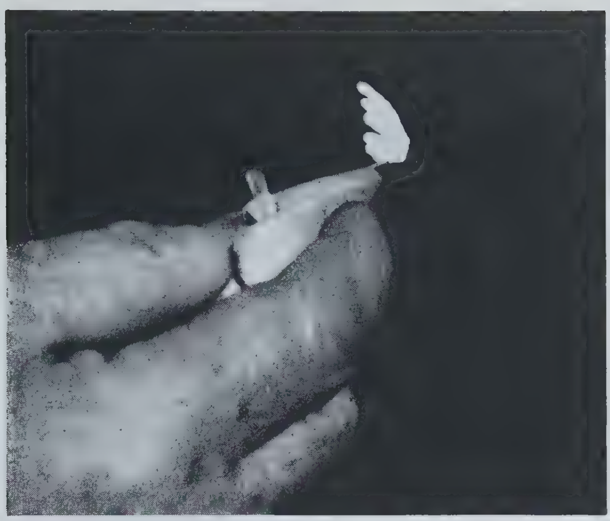


Fig. 19.29.

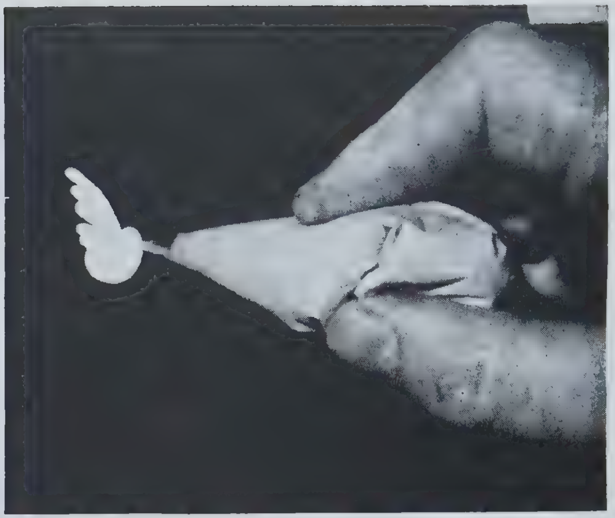


Fig. 19.30.

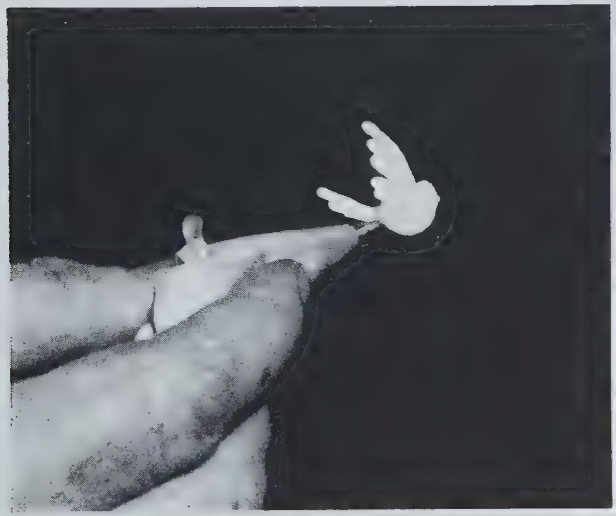


Fig. 19.31.

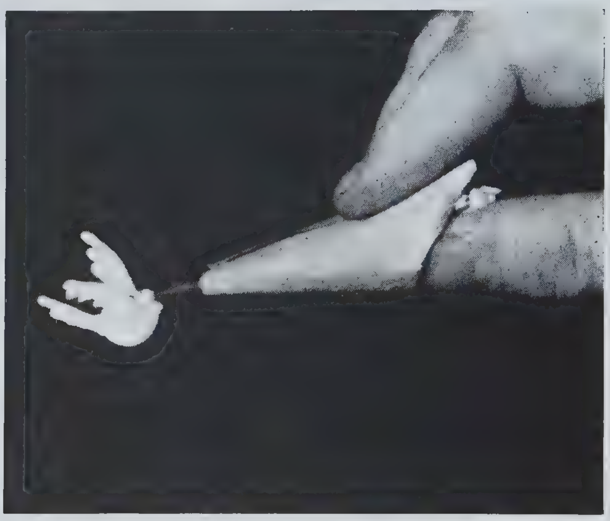


Fig. 19.32.

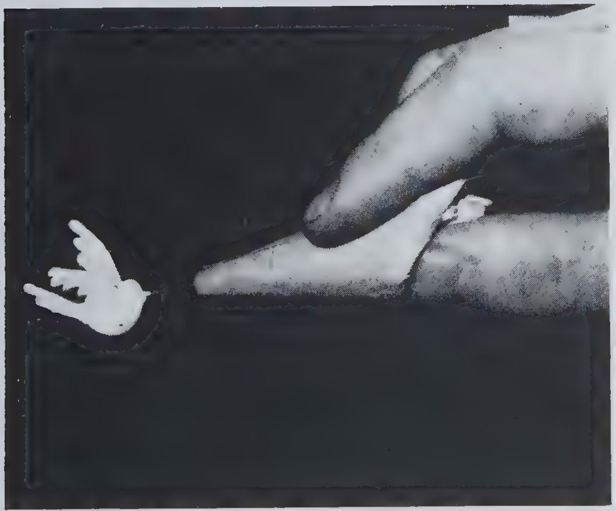


Fig. 19.33.

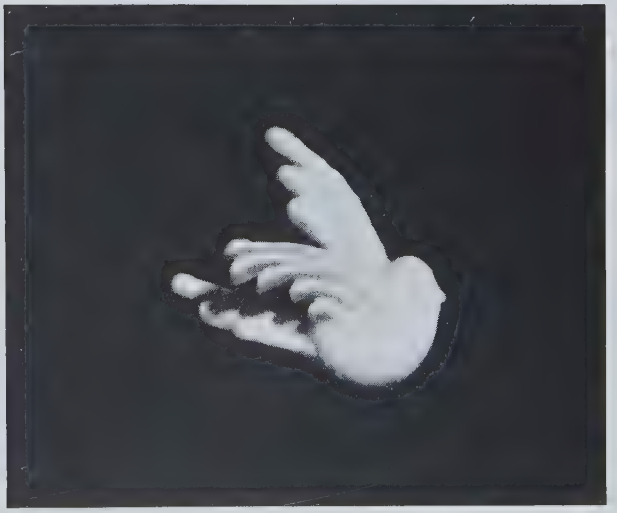


Fig. 19.34.

Fig. 19.29 to 34 *Piping Doves.*

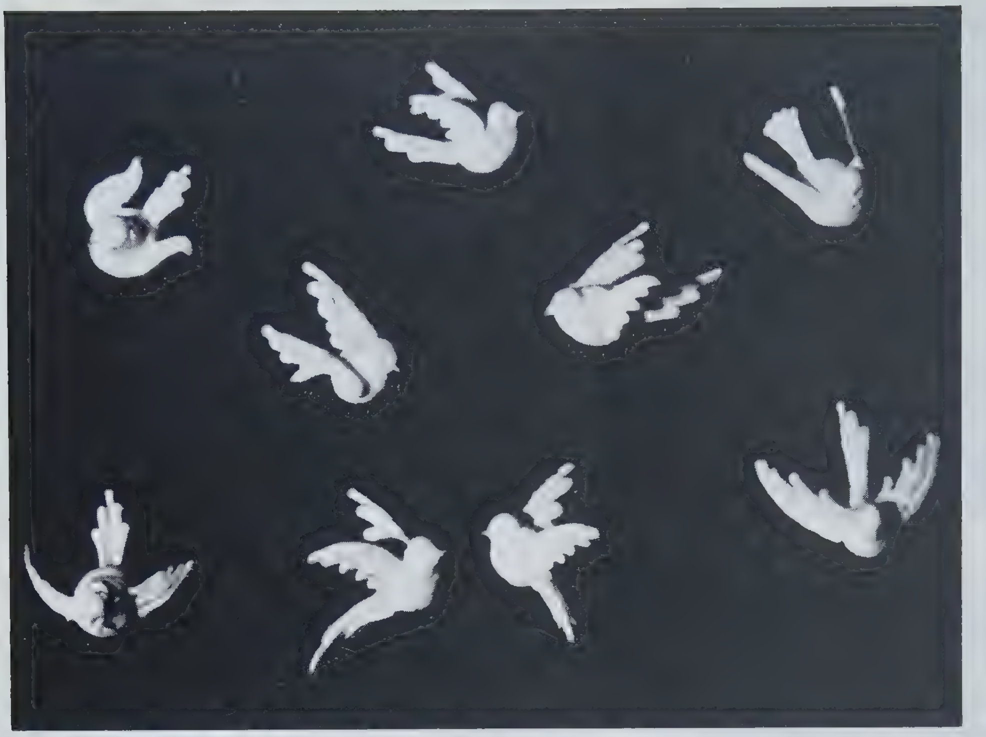


Fig. 19.35 *Flying attitudes.*

endeavour to break down the method into easy stages.

The illustration shows the different phases of piping a dove direct on to the cake. The wing is commenced with either a No. 1 or a No. 2 tube at the base, and is moved upwards and downwards, evenly but firmly maintaining the pressure. Three large feathers are formed in an arc in like fashion, and four smaller ones which diminish in size make up the wider portion of the wing, the last feather being piped so that the tube will finish at the point where the piping commenced. This gives a nice rounded shapely appearance to the finished wing.

The body of the bird is next piped at the base of the wing. A bulb of sugar is piped firmly and boldly, in proportion to the wing, and the tube is moved to the left in a circular manner until the point where the head is to be piped is reached. By reducing the pressure at this point and then resuming the pressure the smaller bulb for the head is formed, and by gradually drawing the tube away a small beak is formed. If desired, the beak can be added separately with a smaller tube than that used in piping the body, for the beak of these birds is fairly short and pointed.

The tail feathers are piped to the body at a suitable angle in a similar way to the wing, that is, out-in, out-in, making three feathers in all; the first is the longest, the second slightly shorter, and so on. In order to produce the natural flight of the bird, a wing previously piped, as in our illustration, is attached to the body as shown in the complete picture.

On these same lines many different attitudes or changes in flight can easily be portrayed, thus giving a wide variety from which we may select to create our scenes.

The second set of pictures shows how the wings and tail are first piped on wax-paper and left until dry. The body of the bird is somewhat larger and is piped boldly with a No. 3 tube. First make a bulb of sugar, keeping the point of the tube under the surface, and gradually lift the tube in an upward movement to form the neck. Again reduce the pressure and continue to form a rounded head, drawing the tube away sharply to give a nice pointed beak. The previously dried wings and tail are now fixed on to the body of the bird. Finish by piping a small dot on either side for the eye in blue coloured sugar, and give the beak a brush of pale yellow colour. This will make the piping more effective.

Another way, by which further support is given to the wings and tail, is by first fixing three small triangular pieces of rice-paper to the body, and when firm, piping the wings and tail on top of these supports, the outer edge of the wing being over-piped to give more strength and emphasis.

Piped birds of this description can be assembled and fixed on wax-paper and stored away for future use. An added advantage is that they can be made when time permits, and are always ready and useful at a busy period. Birds, especially white ones, are mostly used in the decoration of wedding cakes, but they can be equally pleasing on birthday or other ornamental cakes.

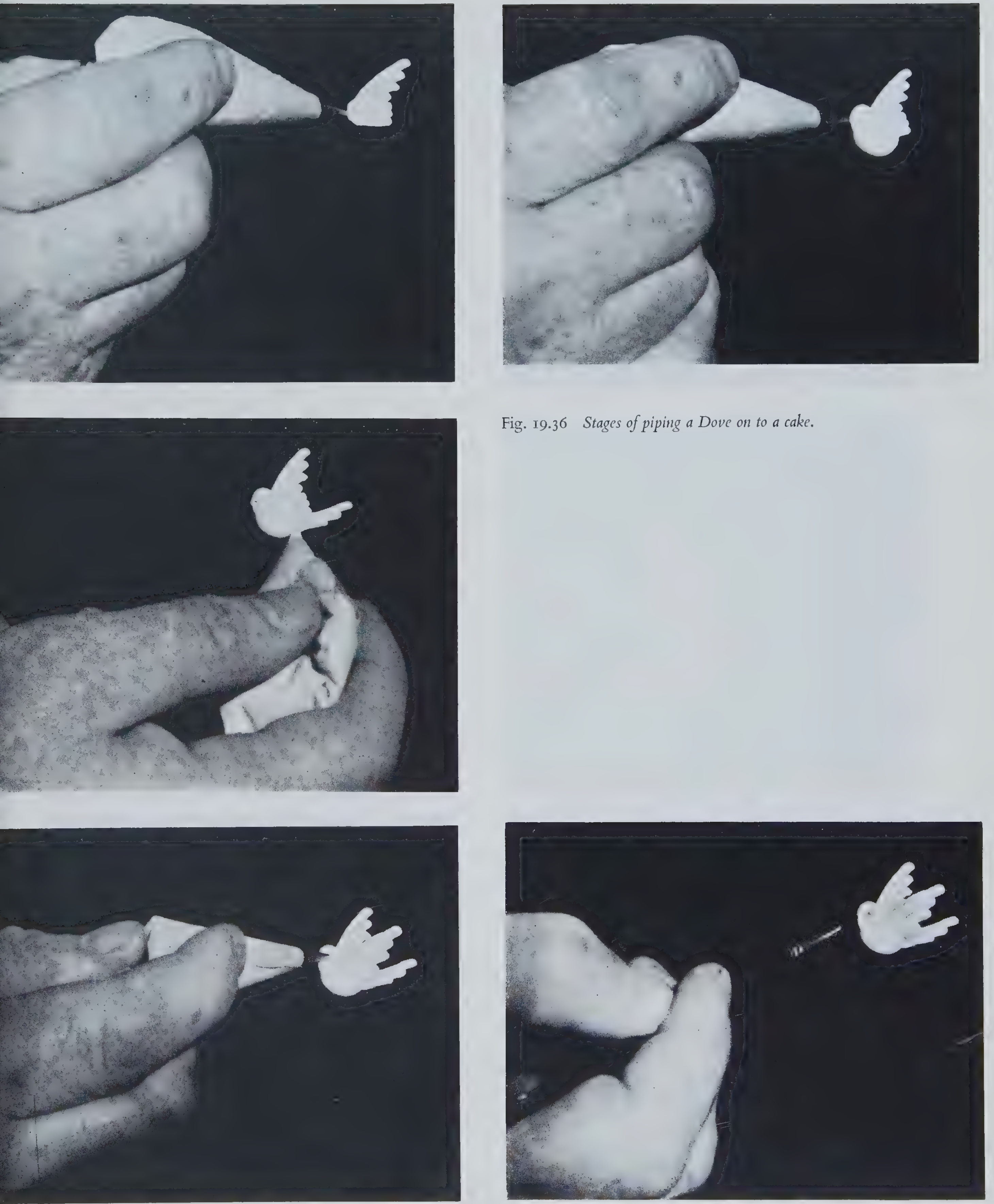
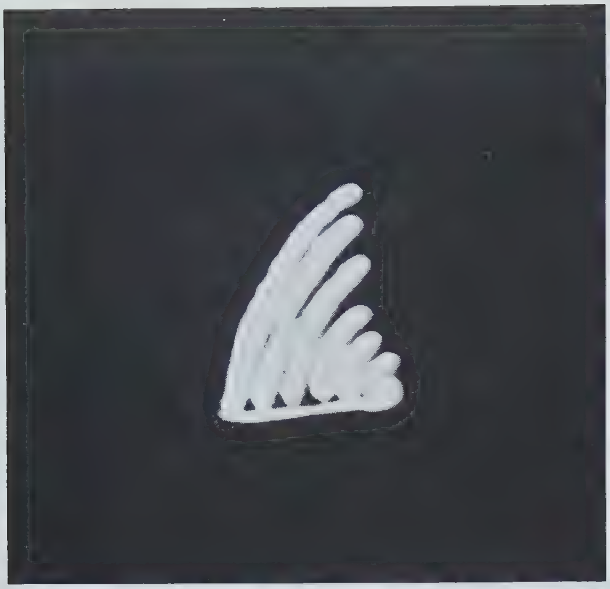


Fig. 19.36 *Stages of piping a Dove on to a cake.*



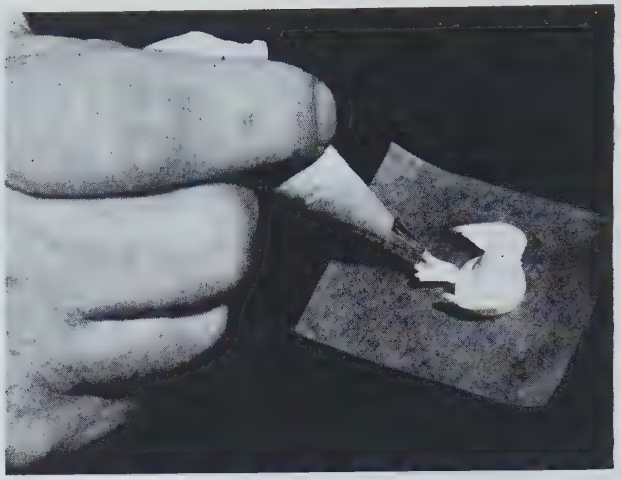
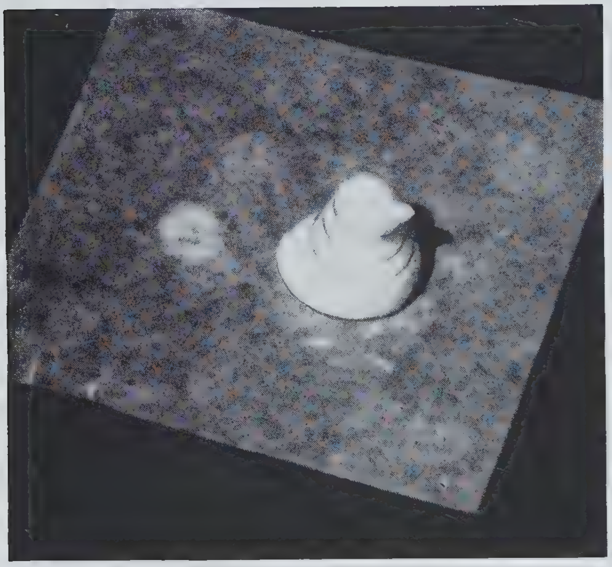


Fig. 19.37 to 40 *Doves prepared for decoration.*



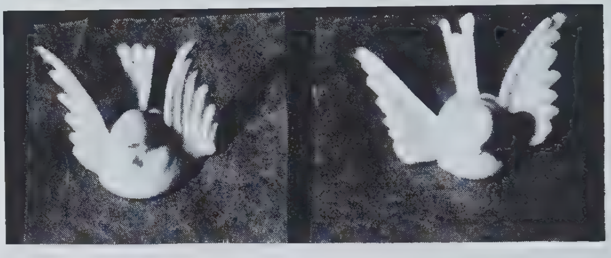
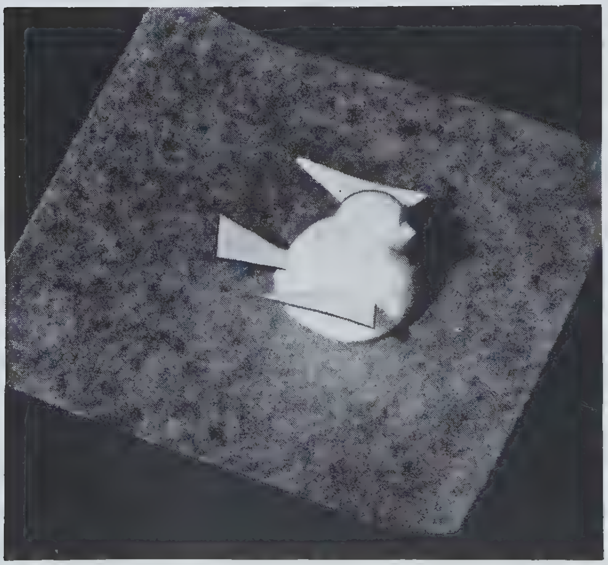
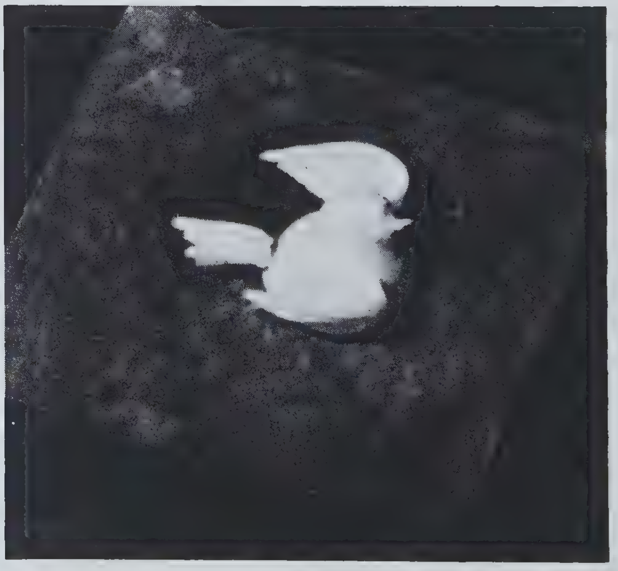


Fig. 19.41 *Doves completed for decoration.*





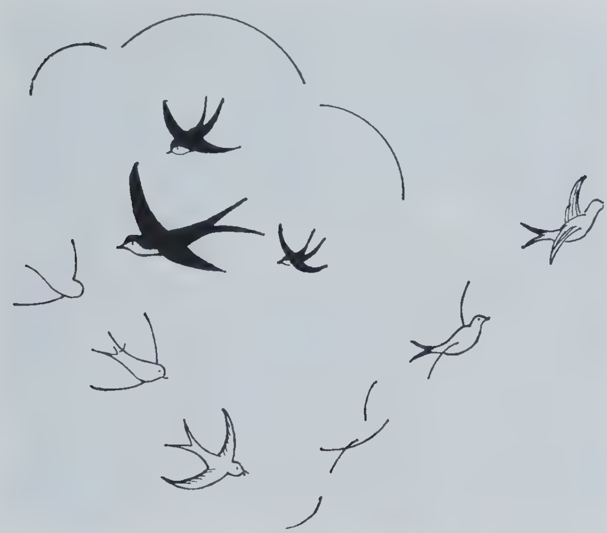


Fig. 19.42 *A Flight of Swallows.*

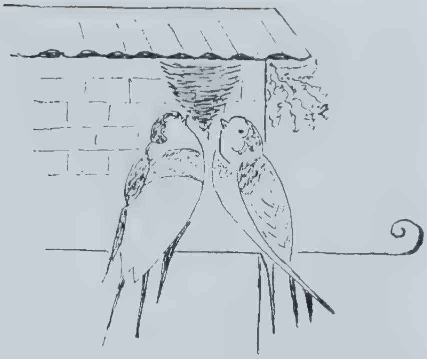


Fig. 19.43 *Two birds with nest.*

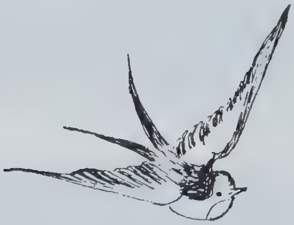


Fig. 19.44 *Bird in flight.*

Swallows

One of the best examples of flying birds is the swallow, so swift and graceful that it gives plenty of scope for a design. The outlines tend to be composed of various arcs, thus giving the movement as seen in both upward and downward flights. Practice will aid in the mastery of this art, when it will seem quite easy to plan and arrange the groups. The swallow, one of our summer visitants, is sketched on the same lines as the dove. First, the proportional outline is drawn, and from this the frontal position of the swallow is ascertained. With a little imagination you will see how to arrange this bird to best effect, then notice how, with a slight alteration to the head, a back view is obtained. Slight adjustments in the surroundings, such as the inclusion of a nest, can result in a delightful picture.

Storks

Once again this is a subject where an initial drawing may prove helpful. The illustration gives a fairly accurate idea of the various proportions of the bird, sketched in a rectangle 2 × 3 ins. It shows a 1/10 in. margin at the base set aside for water, because we usually visualize a stork standing in water. A further 9/10 in. above is the joint in the legs, and a corresponding measurement from the top gives the position of the body and beak. The relative position of the eye and legs can be included. This drawing is intended to act as a guide prior to commencing the figure in sugar.

We must to some extent simplify the procedure, for it is after all a commercial figure that we are to produce. Begin with a No. 3 tube and pipe the curve for the neck, which can be slightly thickened by increased pressure at the lower section; here the body is piped with the same tube in three sections as shown, taking care that the underside is completed with a smooth curve following the same line as the drawing. The legs are piped with a little pressure to accentuate the thicker part, and the main length of the legs is piped on by simple straight lines, preferably with a No. 2 tube. The head is piped to the neck with a nice rounded bulb. The beak is added with a No. 2 tube.

Although this stork is shown as a separate item, this procedure enables one to pipe the figure directly on to

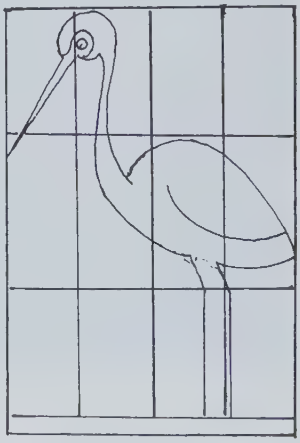
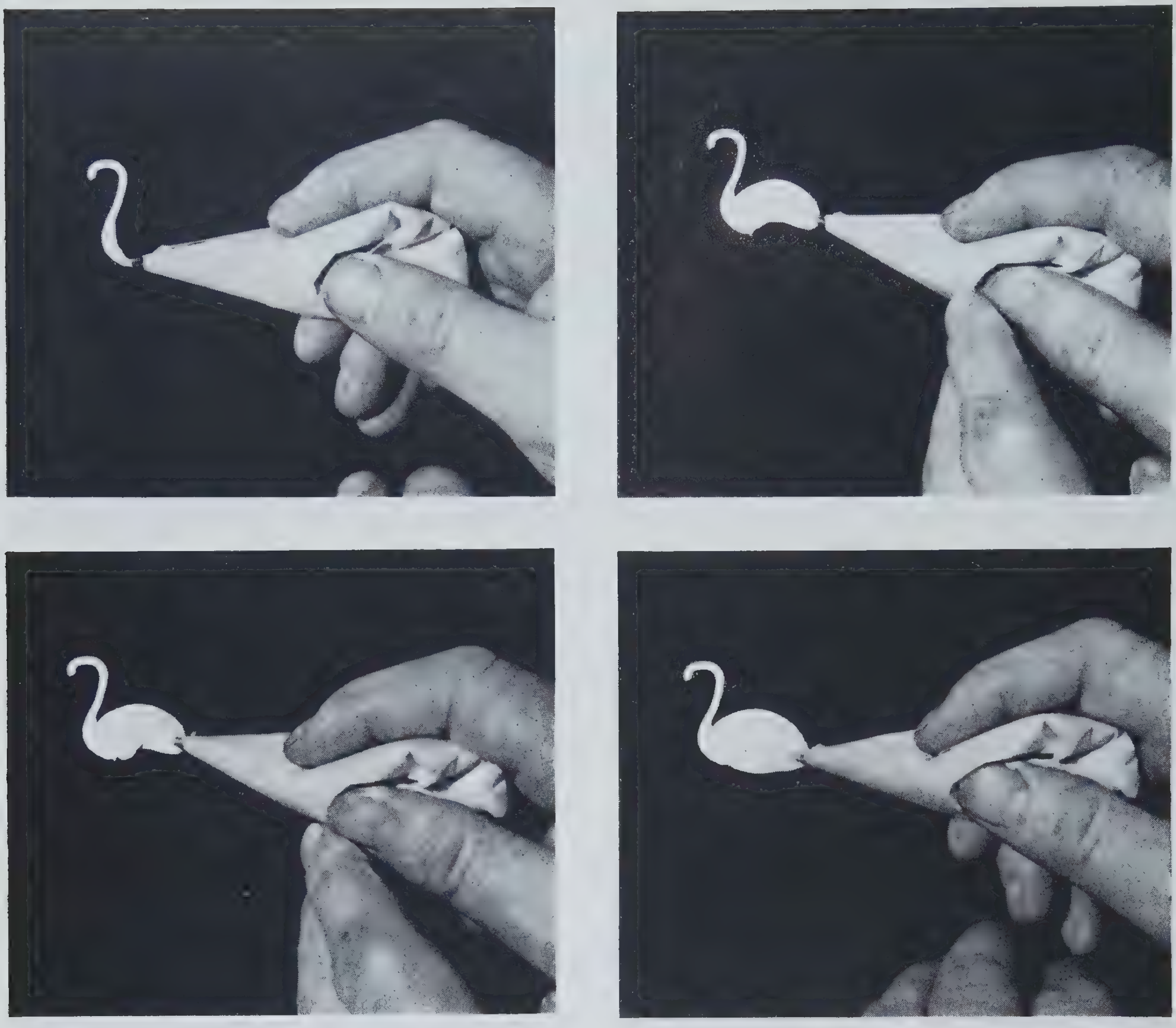


Fig. 19.45 *Drawing a Stork.*



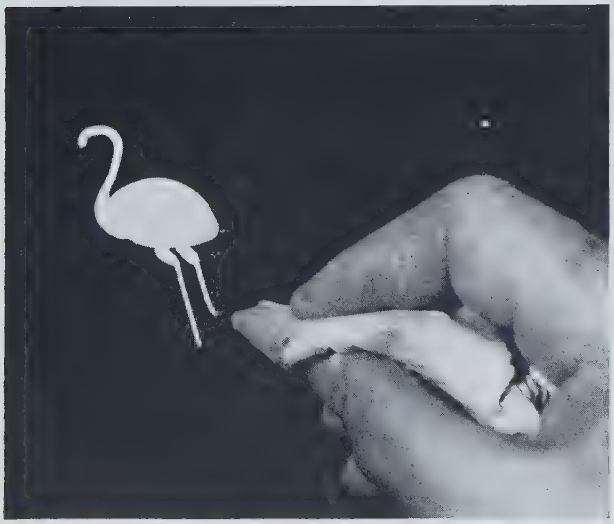
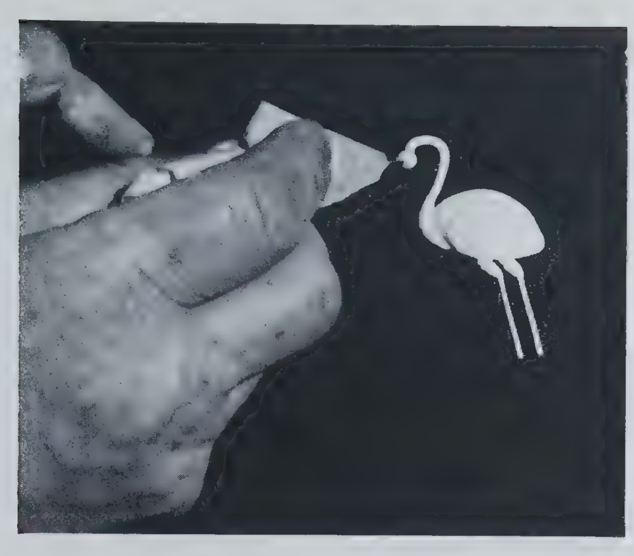
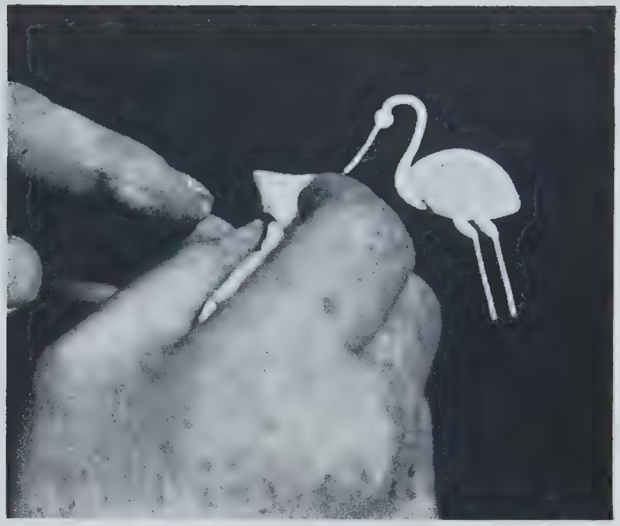


Fig. 19.46 to 52 *Piping a Stork.*

the cake. When dry, the beak and legs are tinted with a little french pink, and the eye and tail feathers touched in with chocolate colour. A positional change of the leg is easily made. To give a more realistic figure try to incorporate a few bulrushes or reeds. They can be piped with a No. 3 tube for the head and a No. 1 tube for the stem, and when dry tinted with chocolate colour. The head should always be darker in colour.

Reeds vary in colour from light green to a withered brown and are usually found in small clumps, but modifications can be made to suit the size of the cake. For instance, if a larger area is to be piped it would be advisable to have two groups rather than one large group. If a smaller cake is to be used it is quite easy to split up the group, showing one or two bulrushes with a reed here and there. An angled view of a group of bulrushes gives it a more compact appearance, but if a





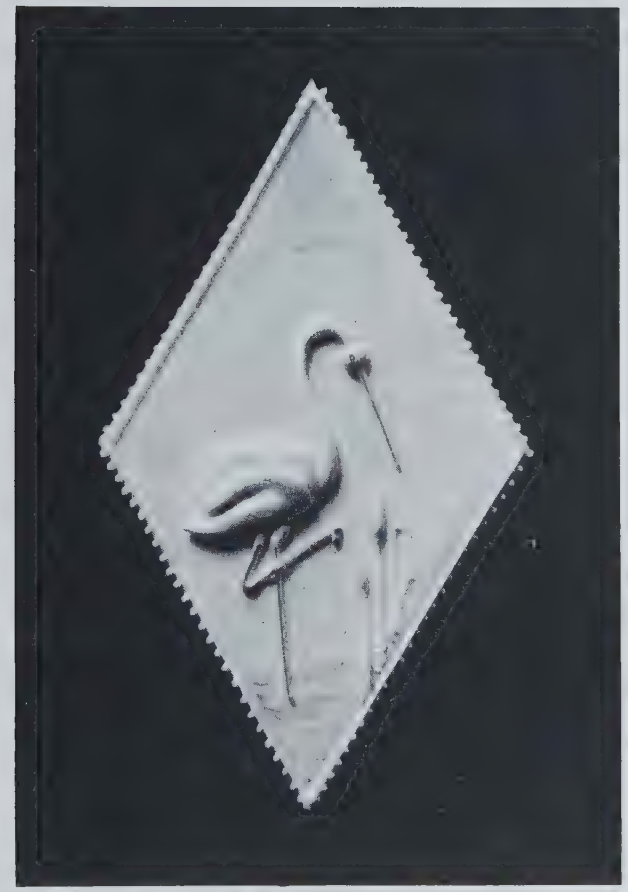


Fig. 19.53 *Piping direct on panel.*

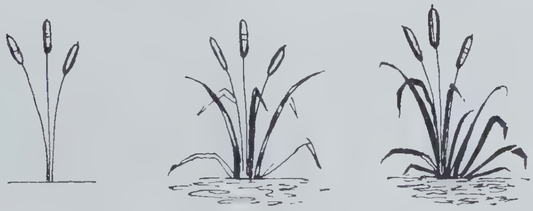


Fig. 19.54 *Reeds and Bulrushes.*

smaller cake is being decorated it may be better to pipe the stems perfectly straight to create a more formal setting. However, these details must be left to one's own discretion.

Game birds

Throughout the shooting season, grouse, pheasant, partridge, wild duck, teal, and snipe are but a few of the many varieties sought after by sportsmen; but the pheasant, being perhaps the most colourful and graceful game bird, is for our particular purposes the first choice.

PHEASANT

The first illustration shows the pheasant in one of its natural positions. The gentle yet graceful movement is

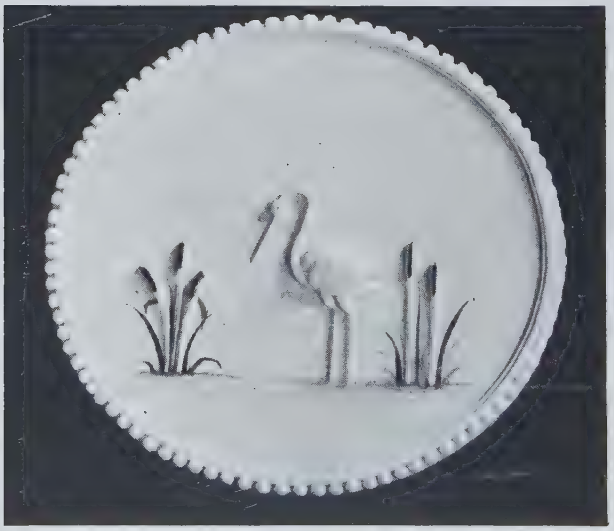
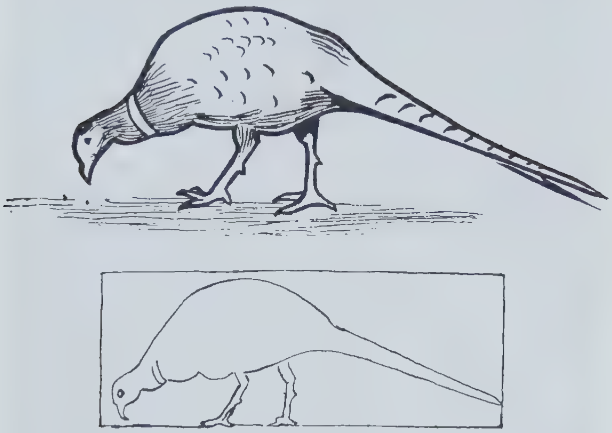


Fig. 19.55 *Stork plaque.*

Fig. 19.65 *Pheasant feeding.*



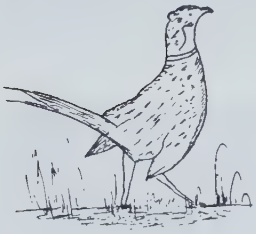


Fig. 19.57 *Pheasant, head aloft.*

emphasized particularly when feeding, being one of the most suitable attitudes to use in our decoration. The outline drawing can be made by means of the diagram to ascertain the various positions. A rectangle is drawn 3 × 1 ins., and the length is divided into ½ in. sections, while the depth is divided into ¼ in. divisions. The third drawing shows the pheasant with a typical leisurely movement, head aloft, full of dignity and grace, a scene to be witnessed in a newly-cut cornfield or along a hedgerow on any cool summer evening.

The pheasant's colouring is an outstanding feature of the cock bird but is somewhat difficult to describe. A mixture of brilliant brown to red is the general colouring of the body, becoming a little deeper towards the tail feathers, which basically are a lighter brown with shaded markings like miniature bars across the tail. The head also starts as a lightish brown but this gradually gives way to the brilliant blue-green so characteristic of the bird, terminating at the whitish ring round the neck. The legs and feet are yellowish-orange.

PARTRIDGE

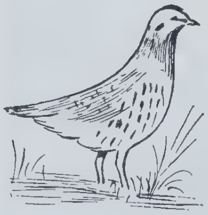
Our second choice of game bird is undoubtedly the partridge. This rather more plump type of bird is equally alert to the minutest sound and is quickly put to flight. As the bird matures, one requires greater skill to get within reasonable distance of it. Notice how the partridge looks more on the alert and ready to move than the pheasant. Although more often than not the partridge is half-hidden in the stubble and very difficult to detect, for the purposes of cake decoration only a proportion of the grasses and stalks should be shown – just enough to give the bird its natural setting.

Here we have illustrated a partridge in a simple setting and, as with the pheasant, a diagram shows how the outline can be drawn – within a triangle.

DRAWING WITHIN A TRIANGLE

The base-line AB, 2½ ins. in length, is divided into ½ in. sections. BC equals 2 ins.; A and C are now joined. Perpendicular lines are drawn from the divisions on AB to meet along AC. A further illustration now shows a much larger bird, primarily to give some idea of the markings and shading of the plumage, although occasions may arise when the incorporation of a larger specimen is an advantage. The colouring of these birds is best described as a tawny brown. This is their general colouring, but at various times and seasons it alters slightly and a proportion of grey is noticeable on the head. The markings on the body and tail are of a slightly darker brown, almost chestnut, blending with the base colour; similarly the shadings on the neck and throat are proportionately darker, and the beak and legs have a yellowish tinge. Obviously the blending of colours in this particular model will need a little more patience than in those described previously.

So far, only the outline has been dealt with, but from these drawings a run-out could be quickly made providing that the sugar is not too slack. Start with the head and neck, and gradually give a little more fullness to the body, then let the sugar taper away to the tail and lastly fill in the legs. When dry, colouring may be added. Simply designed ears of corn or barley could be used for embellishment.



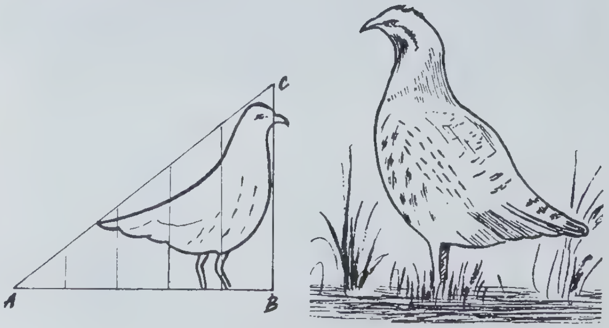


Fig. 19.58 *Large Partridges.*

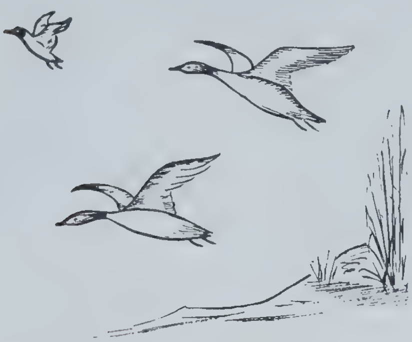


Fig. 19.59 *Wild Duck outward flight.*

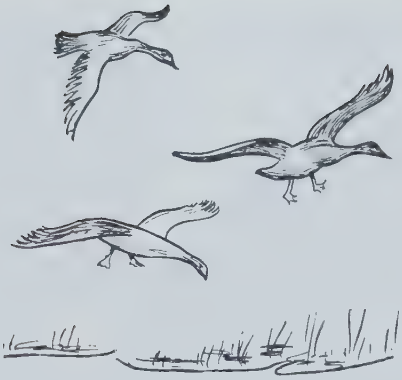


Fig. 19.60 *Wild Duck returning.*

WILD DUCK

We cannot leave the game birds without some reference to wild duck. We more often see these birds in the air or on the water, and this type of picture gives most scope for our decoration. Two different scenes are illustrated, depicting the birds setting off on their early morning flight. Notice how they are flying away or just taking to the air from the nearby rushes or reeds, and the evening flight is returning in the opposite direction. These scenes can be elaborated if desired, but be careful that the balance is not destroyed.

Cage birds

In the world of cage birds there is none so popular today as the budgerigar. An intriguing little figure could well be incorporated in our designing of cakes.

Make-up of Budgerigar

As illustrated, the make-up of the bird is divided into four stages. In the first you will notice that at the commencement the drawing is based on a circle, which in turn gives the different points at which to line in the various sections. The wing should be sketched in next, followed by the breast and tail.

The Parrot

Very similar in shape to the little budgerigar is the parrot, a very colourful bird, fairly easy to draw, although its artistic value is limited. A simplification of the outline is shown in the graph composed in a rectangle of 2 × 1 in. subdivided into ¼ in. squares. The position of the eye, wing, tail, and perch can be readily drawn, together with the make-up of the plumage.

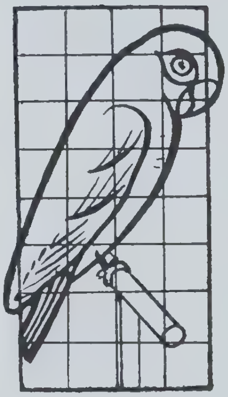


Fig. 19.62 *Parrot.*

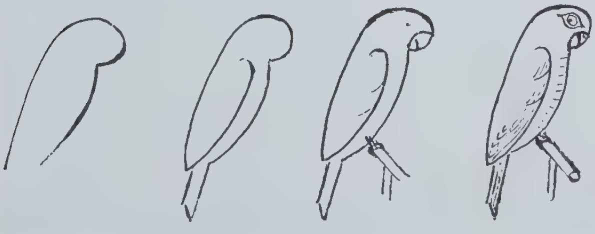


Fig. 19.61 *Budgie.*

Owls

Lastly, we turn our attention to the owl, seen flying at dusk, located by its chilling screech but a recognized friend of the farmer. There are, of course, various species of this bird but for our purpose we do not pretend to copy one accurately but rather to create a general likeness to the barn owl. Here we have shown how to draw such a bird in progressive stages, the most difficult part being the head and eyes, but once these have been correctly drawn it will be found much easier to complete the picture. The value of the bird for decoration is not very high, but it is certainly worth consideration.

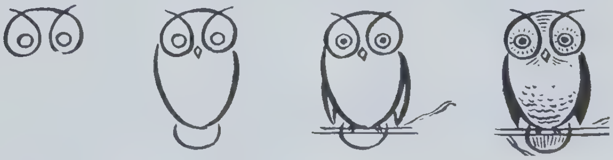


Fig. 19.63 *Stages in drawing an Owl.*

20 Figure Craft: Animals

Rabbits

Before attempting any piping we must consider the outline of the rabbit and its general make-up. For this purpose a sitting rabbit would provide us with the best practical example. First, note the shape of the head, the position of the eyes and ears; and secondly the proportion of body; and thirdly the position of forelegs and hindlegs. To help in assessing the various positions, draw a 1¼ in. square and bisect it into four equal divisions. The rabbit is then drawn as in the illustration. This method of procedure is primarily in order to achieve an eye for proportion and outline, for once this has become a mental picture it is comparatively easy to portray in sugar. At this stage one can always outline the figure and fill in with soft sugar when dry; the details may be added later, be it with sugar or colour.

By now we should have a fairly good idea of piping the shape and can proceed to develop this further.

Here we have just a plain flat run-out, quite useful for many decorations; but to make a more realistic figure it is necessary to introduce some of the features, notably the fullness of the face and the boldness of the body to

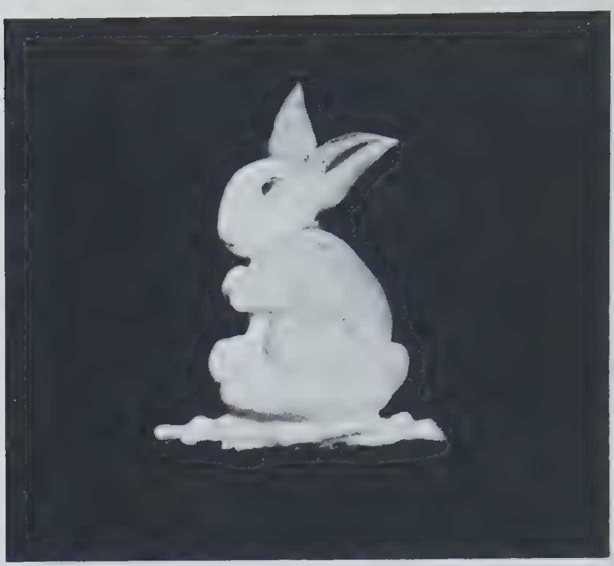
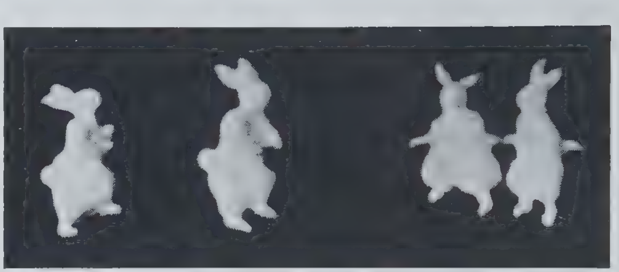


Fig. 20.3, 4 *Different positions.*



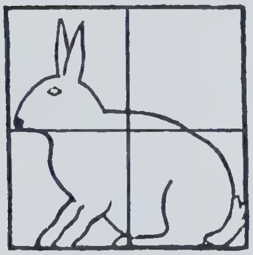


Fig. 20.1 *Rabbit drawing.*

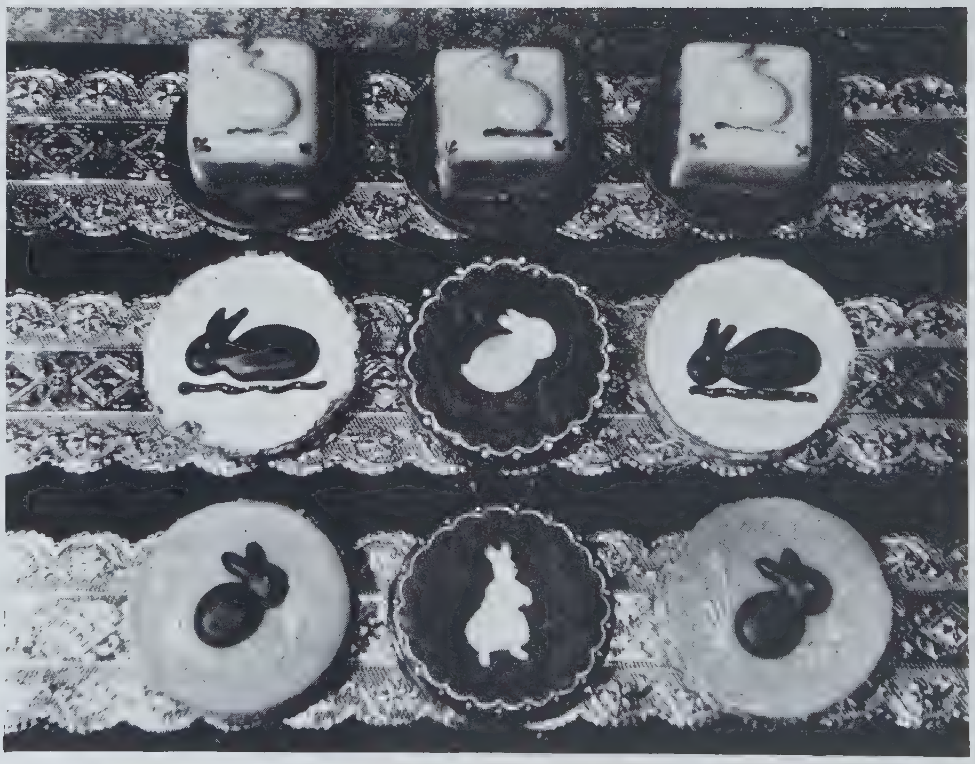


Fig. 20.2 *Rabbit decorations.*

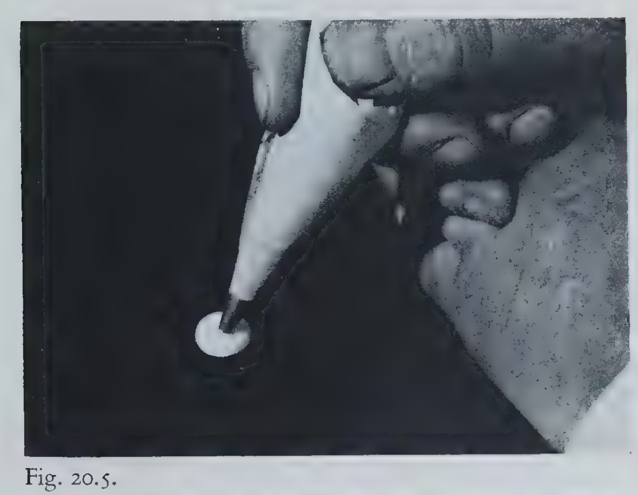


Fig. 20.5.

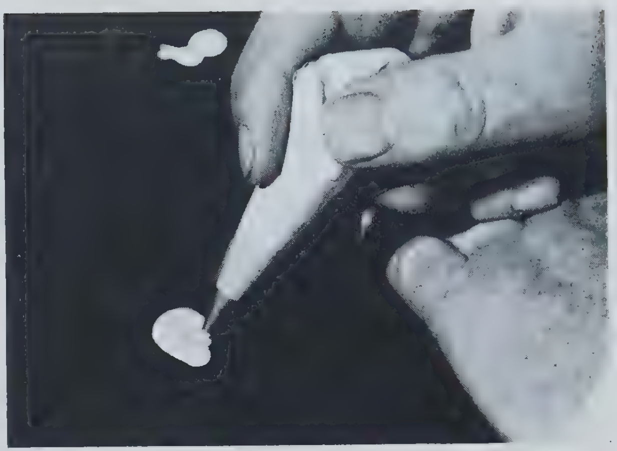


Fig. 20.6.

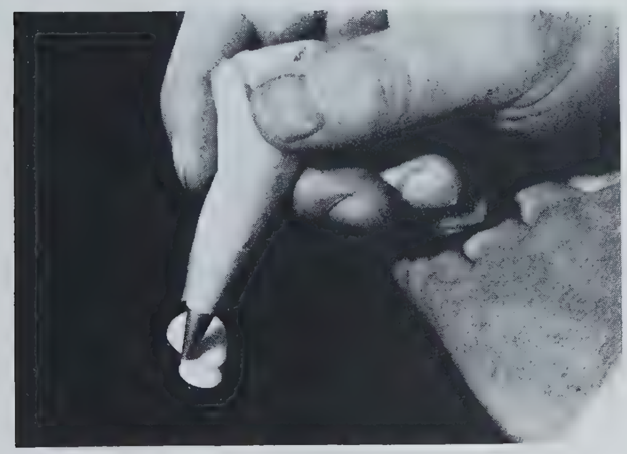


Fig. 20.7.

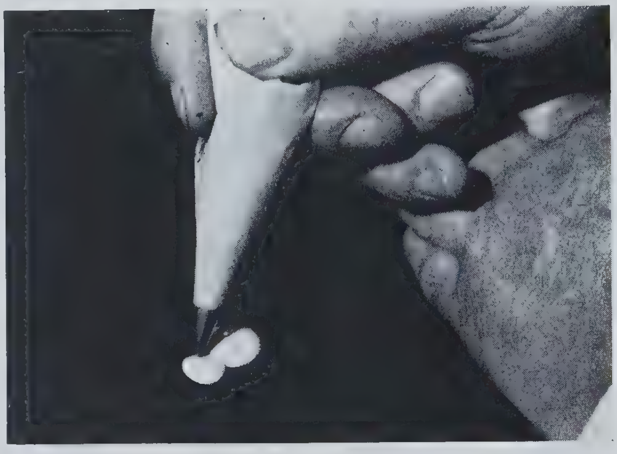


Fig. 20.8.

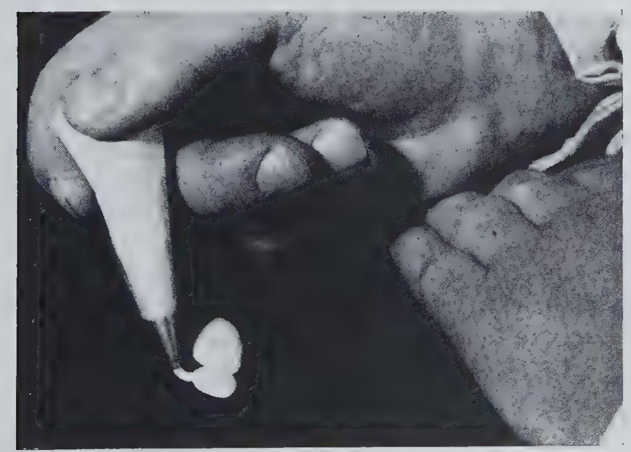


Fig. 20.9.

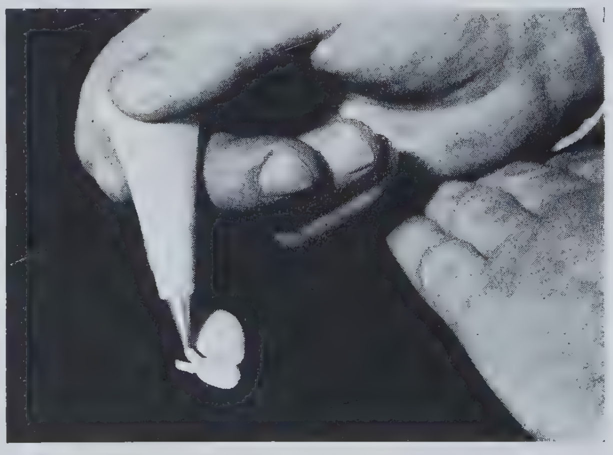


Fig. 20.10.

Fig. 20.5 to 12 *Stages of piping a Rabbit.*

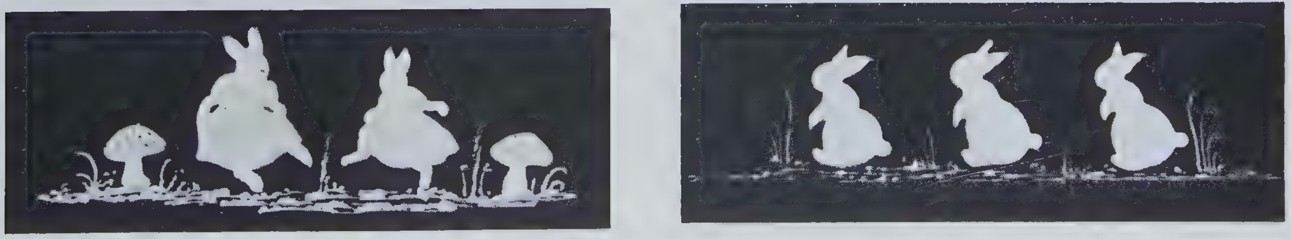


Fig. 20.13 *Rabbit groups.*

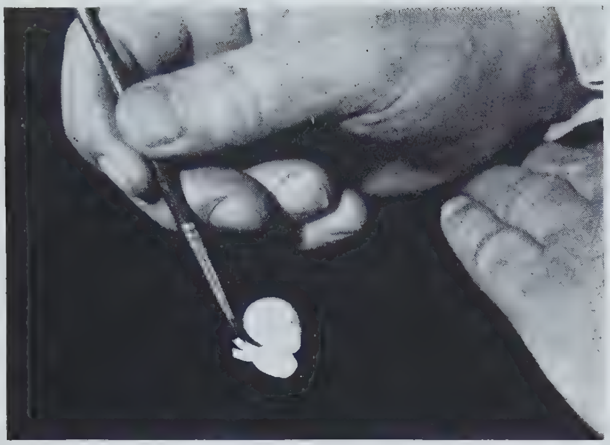


Fig. 20.11.

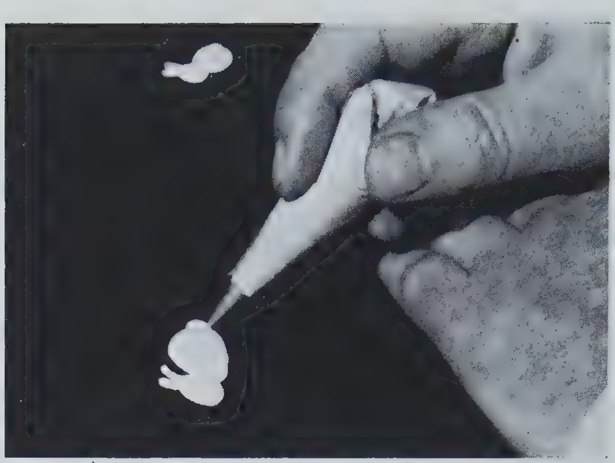


Fig. 20.12.

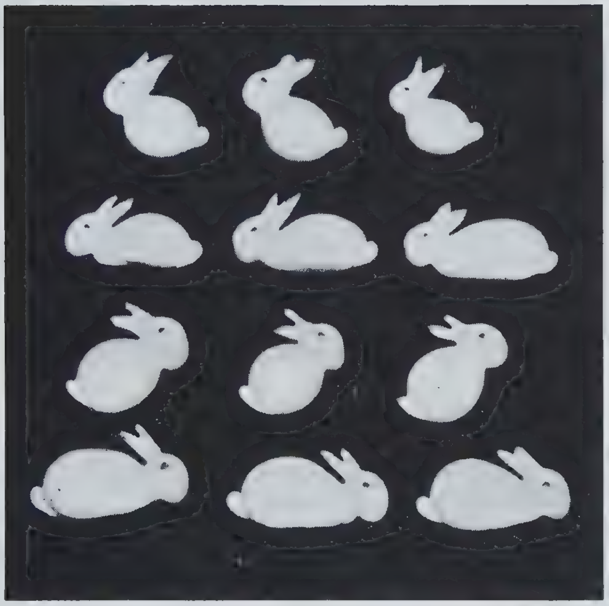


Fig. 20.14 *Piped Rabbits.*

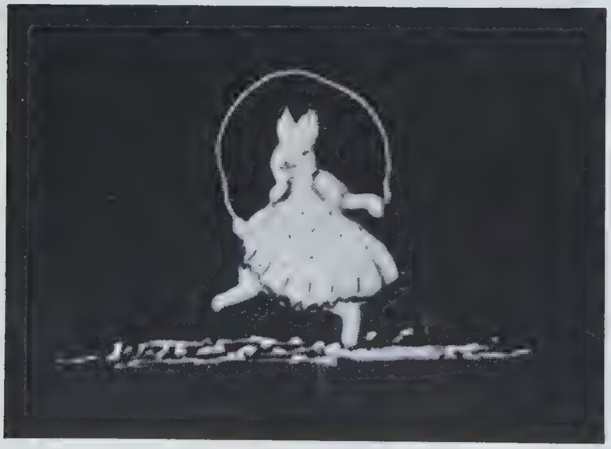


Fig. 20.15 *Skipping Rabbit.*

which the legs are joined. Well-beaten icing, slightly reduced with a little water, would suit our purpose. The shape must be bold yet the sugar should just lose its line, thereby giving a clear surface to the figure.

First pipe the body and then the head. In order to portray these as faithfully as possible, the point of the tube should be kept beneath the surface of the sugar and moved, while pressure is maintained, in a circular fashion, as this enables outline and boldness to be produced simultaneously. This movement of sugar should be even at all times, as any uneven pressure will only cause rough, misshapen figures.

Pipe a bulb, slightly oval, finishing at a point where the head joins the body. Next, pipe the head with the same tube, again slightly oval in shape, and at right angles to the body. The ears are now piped and a little indentation is made on the ear appearing nearest to the eye with a small paint-brush. Finally the tail, and when dry the eye is piped in with a darker colour. When the head and body have been piped, the forelegs and hindlegs are done in the same way; that is, the point of the tube must be below the surface of the sugar when we begin to pipe the legs, as these are part of the body, not simply an addition.

FIGURES IN MOTION

The previous illustrations have depicted a stationary rabbit, perhaps the simplest form of portrayal, but we

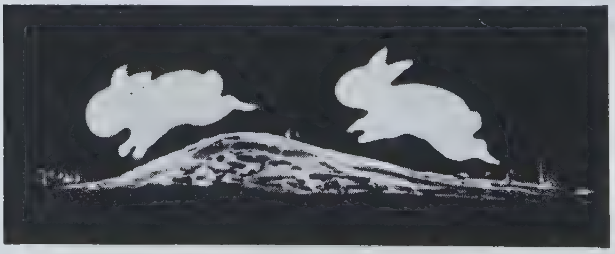


Fig. 20.16 *Running Rabbits.*

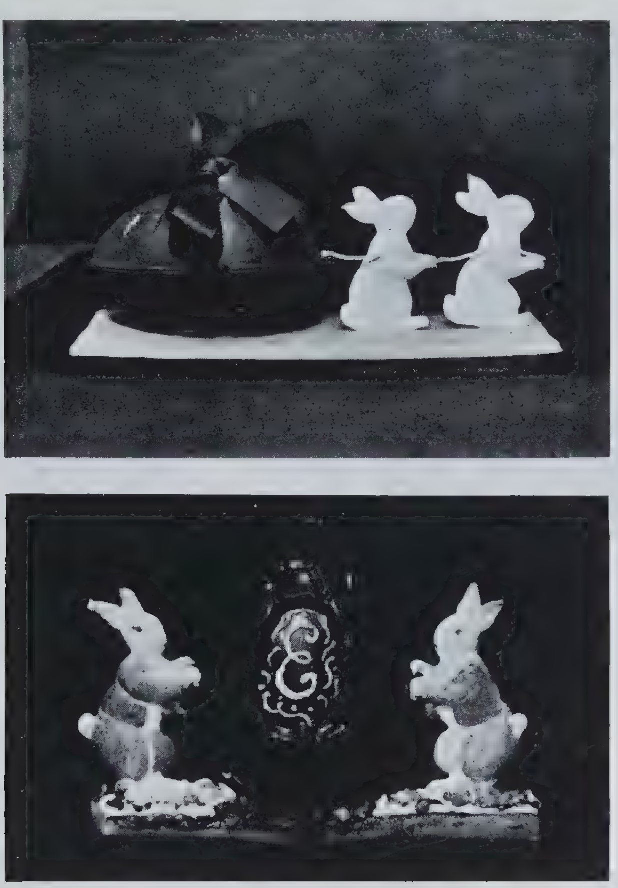


Fig. 20.17 *Easter Rabbits.*

must again take our study a step further and at once our attention is focused on their movement. Figures in motion can be varied at will, but basically it is an idea that must be repeated in sugar. Having a sound conception of outline and the manipulation of the sugar, one tends to formulate ideas that can be readily brought into being. A running rabbit gives an ideal action picture with movement in every limb. One point here to be noted, and of great importance, is that where action is introduced the legs and ears farthest away from the eye should be piped first, thereby giving the fullest emphasis to the nearer limbs. A few lines of varying lengths may be piped at ground level, as this will create the impression of speed. Remember, it is details of this description that complete the scene.

Fascinating squirrel

The squirrel, fascinating little creature, now fully recovered from his winter's sleep, swiftly darts from bough to bough. Busy as he may be, perhaps in a rather destructive way, he never fails to attract us. Happily he traverses the trunk of a tree, particularly that of the pine, for the cones in some areas provide his main source of food. The agility with which he plucks the cones is amazing, for when a suitable branch is found for his enjoyment he at once systematically tears the cone piece by piece, casting each to the ground when finished. Fragments from the high-up branch flutter down in almost rhythmic sequence, thereby indicating his position. This procedure is continued for some time until we find a cluster of leaves creating a miniature pile at the base of the tree. Finally the centre of the cone, meticulously denuded and conically shaped – so much so that one would almost think it to be fashioned by hand – is thrown to the ground and the squirrel leaps to another branch to select his next course.

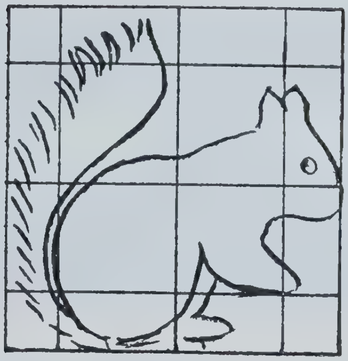


Fig. 20.18 *Squirrel drawing.*

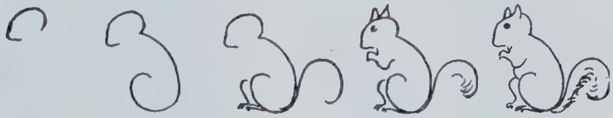


Fig. 20.19 *Stages of sketching.*

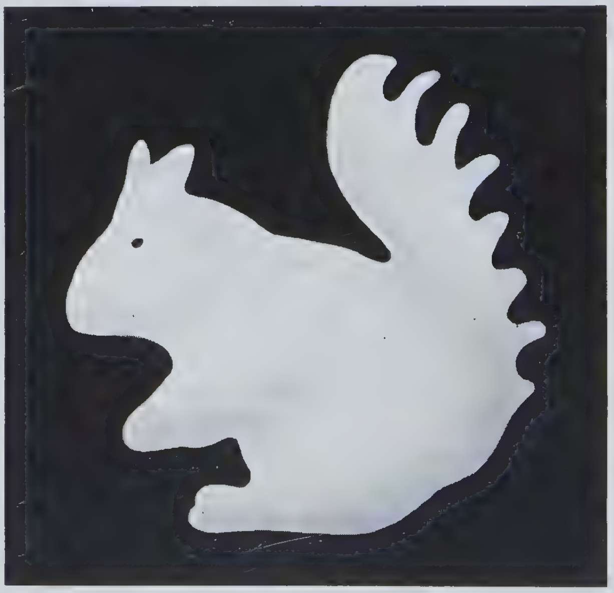


Fig. 20.20 *Piped figure.*

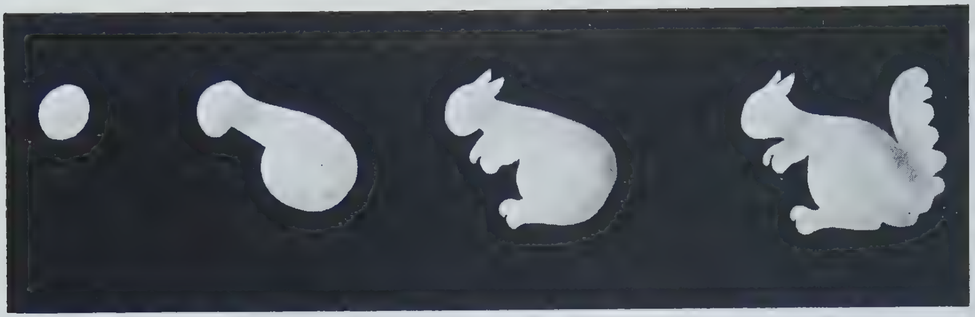


Fig. 20.21 *Stages of piping.*

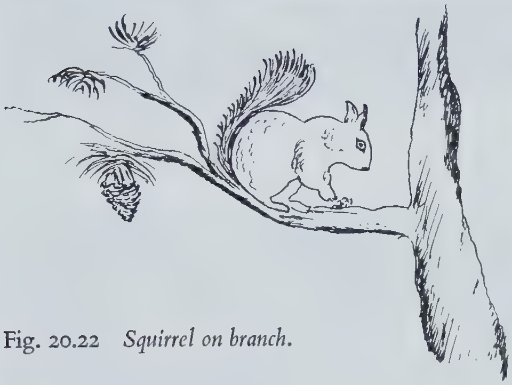


Fig. 20.22 *Squirrel on branch.*

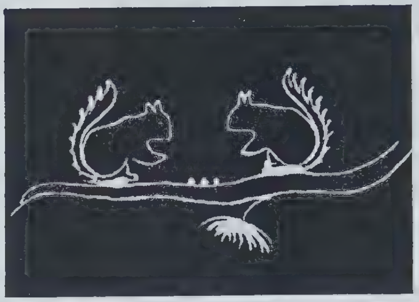


Fig. 20.23 *Outline piping.*

SKETCHING DIFFERENT SCENES

In springtime he makes his nest or drey high up in the fork of a tree or in a hollow trunk. Such a subject will allow us to create a somewhat different scene for our decorative purpose. The illustration gives some indication of the relative proportions of this energetic little animal. To begin with, draw a square 1¾ ins. and subdivide it into four equal divisions. Further lines are then drawn to create a border 5/16 in. in width, leaving the square in the centre 1⅛ ins. Considerable help in the sketching can be obtained from these diagrams. The position of the ears, eye, and the proportions of the tail are the main points to be noted.

Having completed the drawing, the next thing is to consider the creature's natural surroundings, and how they will accord with the position in which we aim to depict the scene. For the next illustration we show the squirrel in its own environment. One of its regular habits is to sit on a branch eating nuts from its store, or partaking of a meal from a newly plucked cone. Although we have shown the trunk of the tree with its outstretched branch, it does not follow that all of this must be included in our decoration. Possibly the branch only, with a little foliage, would be sufficient, but this must depend upon the space at our disposal or the type of cake upon which the decoration is to be applied. The squirrel might also be placed on the ground in a similar attitude by the trunk of the tree. These suggestions give some idea of the possibilities of the subject.

We now see how the squirrel may be drawn in another situation. A further sketch shows a change from the sitting position and the various stages of drawing, and tends to emphasize the mobile curve of the feathery tail.

STAGES OF PIPING

So far we have devoted our instruction to the drawing of the subject, but now let us turn our attention to the sugar work. Piping of these animals may be done either as a run-out piece or by direct piping which must be carried out in a similar manner to the drawing.

First the head is piped with a plain tube, making the nose slightly pointed, and secondly the body is piped with a little pressure, ensuring that the tube follows the line in a scroll-like fashion as in the sketch. The tail is now commenced with the outer curve, and then the feathery underside. Pipe scrolls to join the outer curve, gradually diminishing in size until the base is reached. The legs and ears can now be put in, and lastly the eye. Add a little background, such as a few blades of grass, a wild flower here and there, and so bring this miniature figure to life.

The hare

Another animal frequently seen at this season is the hare. How often when enjoying our English countryside have we caught a fleeting glimpse of the hare racing across a nearby field! Having reached the centre he sits

Fig. 20.24 *Drawing of Hare.*

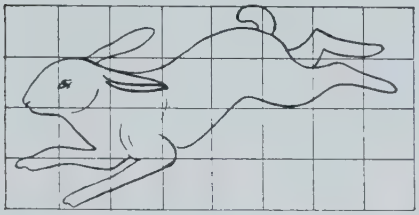


Fig. 20.25 *Piped figure.*

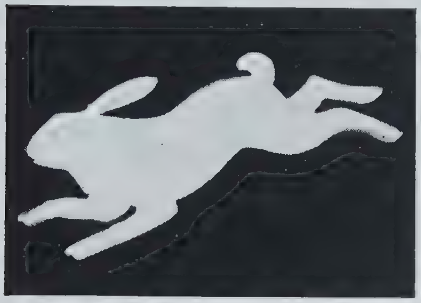


Fig. 20.26 *Drawing of sitting Hare.*

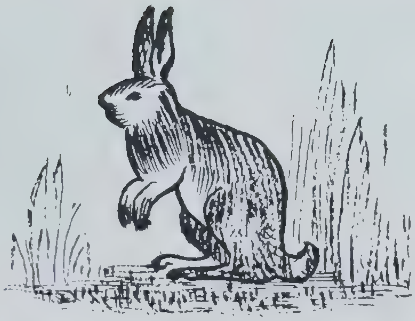
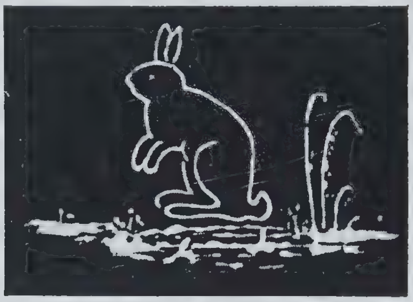


Fig. 20.27 *Outline in sugar.*



up in the deepening grass, ears alerted, listening for any sound that may once again set him on his way.

In order to portray the running of the hare we have made the animal rather larger than usual for this will give greater emphasis to detail, and set amidst its natural surroundings an effective scene would speedily be produced. Another point here is that more often than not the hare is a lone runner and therefore will only need the addition of a little ground coverage to complete the scene.

But now let us consider the drawing with greater perception. Initially a rectangle is drawn 4 × 2 ins. and subdivided into $\frac{1}{2}$ in. squares. Notice how the eye falls in line with the foreleg, how the tail and hindleg are similarly positioned, while the centre line across the rectangle gives the position of the nose and rear leg. The top of the head also falls in line with the underside of the hindleg. Here a fairly accurate drawing can be made by using such a graph.

The second illustration shows a smaller figure which is produced in various stages. The head and back are drawn first, followed by the hindquarters, next the forelimbs, and finally the ears. Again, this is a tame action picture and one most frequently seen. It is a suitable size to employ on a border design, or even as a small run-out to be positioned when dry.

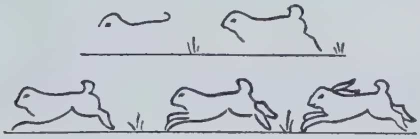


Fig. 20.28 *Running Hare.*

The colouring of these animals is fairly uniform and basically a combination of brown and white. Either add the chocolate brown colour to the previously piped white figure, or a blend of the two colours in soft sugar could give an equally effective finish.

Domestic animals

The English are famed throughout the world for their love of animals. In the country we have the shepherd and his dog, the huntsmen with their hounds, the gamekeeper and his retriever and, last but not least, the blind man and his guide dog. These are but a few of the many instances in which animals play a very important part in our English way of life.

The home, too, would not be complete without pets. In one way or another a great many of us depend on the faithfulness of a dog or the companionship of a cat. Such subjects undoubtedly have their limitations in confectionery work, but nevertheless they are useful figures to have on hand for special occasions.

PUPPIES AND CATS

Let us now look at the possibilities in the figure of a dog. Whenever we consider pets we immediately think of children, and therefore we must be practical and adjust most of our ideas to fit in with youngsters. The first illustration shows a typical action picture of a small terrier-type puppy which could be easily transferred to any particular decorative scheme, either as an outline and coloured in, a run-out sugar piece, or even as a marzipan cut-out.

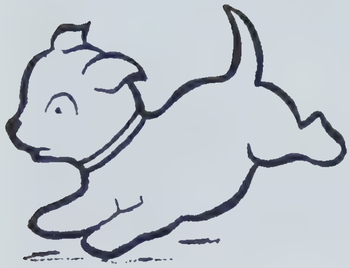


Fig. 20.29 *Puppy running.*

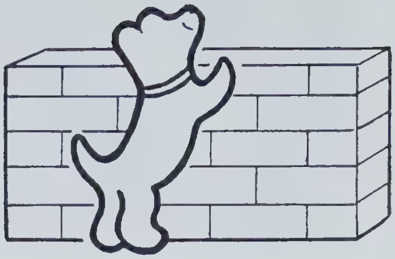


Fig. 20.30 *Puppy over wall.*

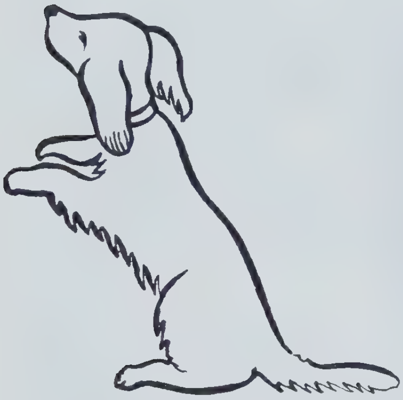


Fig. 20.31 *Appealing pose.*

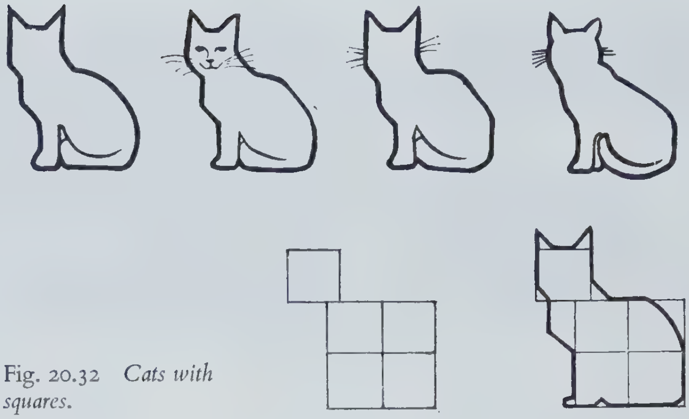


Fig. 20.32 *Cats with squares.*

The second illustration is of an even smaller puppy looking over a wall, ever inquisitive and full of mischief, a very attractive little figure, ideally suitable and with simplicity of outline. Another variation is an appealing picture of a dog begging. His coat also shows two variations, for the back is smooth and the underside rough and ragged, a noticeable feature in some breeds. These examples give some idea of the possibilities this pet has to offer.

Perhaps not so impressive where cake decoration is concerned, but well worth consideration, is the portrayal of a cat or kitten. This popular pet can be easily designed by the use of squares. Begin with a $\frac{3}{4}$ in. square and divide this into four equal squares. A fifth square of the same dimensions is now drawn at the top left-hand square and slightly overlapping. In the second stage, the two perpendicular lines of the top square are extended to form the animal's ears. It is quite easy to complete the remainder of the body. In stage three the squares are removed to give a definite outline, and, beginning with facial markings, light shading is added to represent the fur. Note how the same outline can be used to show the cat looking either way. In the final stage the body curves replace the squares, and thereby give a more authentic appearance.

LAMBS

A careful study of animal life could be most helpful to the artistic confectioner in portraying such figures in sugar. These lively animals can be piped in various ways; they may be in the form of a run-out or they may be piped from well-beaten icing. The size will to some extent decide on the method to be used.

It will be seen from our study that a larger volume of sugar must be piped for the main body, and as we endeavour to pipe a larger form it will become more difficult to control the pressure of the sugar in order to pipe the correct shape. Therefore the ultimate size must first be decided. To help with this the specimen diagram primarily shows how to assess the proportions of the head and limbs. The main composition of the figure is made up of two squares. The larger square gives the main body formation, while the smaller square gives the head in proportion. The corresponding measurement, the width of the head, is added to either side of the large square to complete the figure. If the line A be

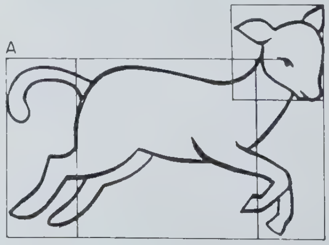


Fig. 20.33 *Lamb. Two squares.*

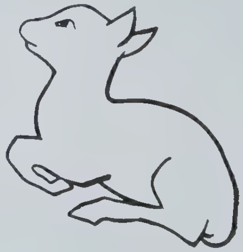


Fig. 20.34 *Sitting lamb.*

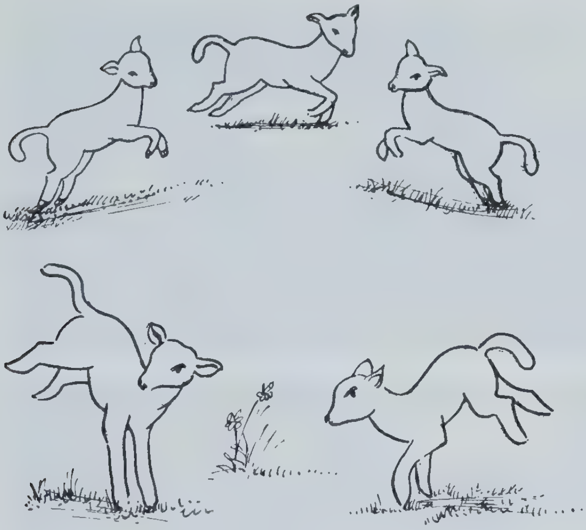


Fig. 20.35 *Spring Lambs.*

continued, as in the diagram, it will give the ideal position for the eyes.

It will now be seen that a body of this width could not be successfully piped in one motion, therefore this type of figure is far better piped with semi-soft sugar, moving the tube in a circular fashion.

Alternatively, the figure could be first outlined, then filled in; but this would give a flatter figure. Once a diagram has been constructed it will be noticed that the same figures can be arranged to great effect and in many positions according to individual requirements, and by skilful placing we are able to retain the natural postures of the lambs. By this means, many interesting groups and scenes can be evolved.

Direct Piping

Although this method gives perhaps a more faithful reproduction from which to commence, we must also consider a more direct form of piping such animals. Having mastered the preliminaries of figure piping, we gain a sense of satisfaction from artistry speedily produced. The following series of illustrations shows the build-up of lambs by what may be termed direct piping. In every instance we commence by piping the main body, for by so doing the natural position is more easily obtained. Next, the legs are formed, taking care that the foreleg and hindleg nearest to us are the boldest; also, these two legs must be piped as if they were part of the body, not just an addition. The head is then put in position and then the ears. A slight indentation in each ear, made with a small paint-brush, gives the desired natural effect. Finally, the tail is added. All the piping is done with the same tube.

The fleece of the lamb is slightly rough, so that any ridges or marks left in the body by the forcing of the sugar tend to give a natural appearance. If, however, a more woolly-looking coat is required, this can be achieved by lightly dabbing on icing sugar with a brush when the figure has dried.

All the figures may be made with white sugar for we invariably think of a lamb as white, but they could, of course, be carried out in pale cream or off-white. To finish these animals the base of each leg may be touched with chocolate colour, and also a slight tint on each ear. Similarly, the mouth and nose are added and finally the eye. Various action pictures illustrate the effectiveness of sugar in the piping of animals.

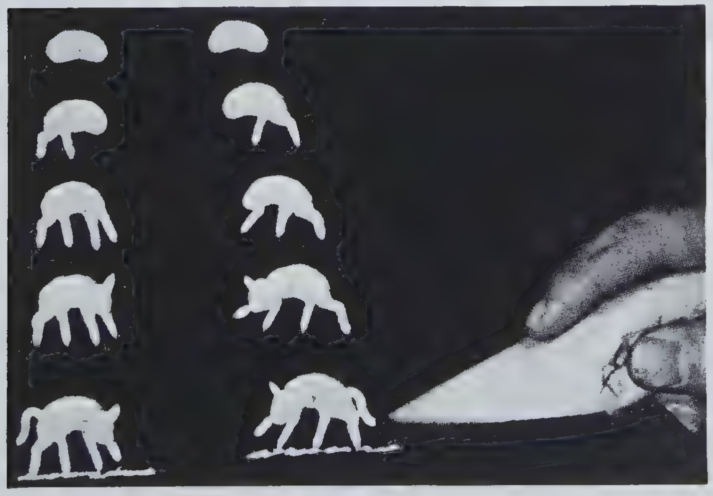


Fig. 20.36 *Piping Lambs.*

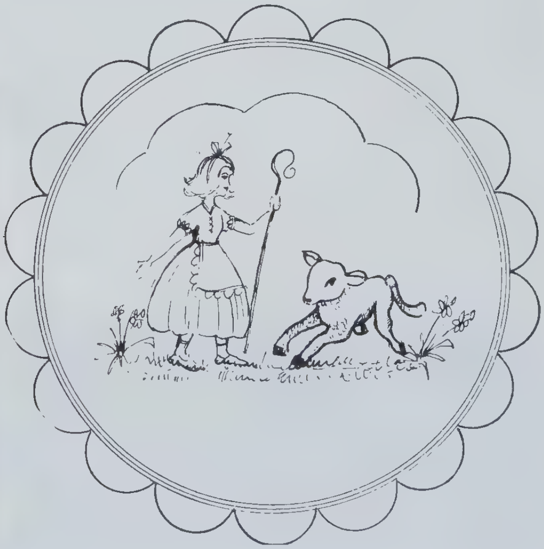


Fig. 20.37 *Design plaques.*

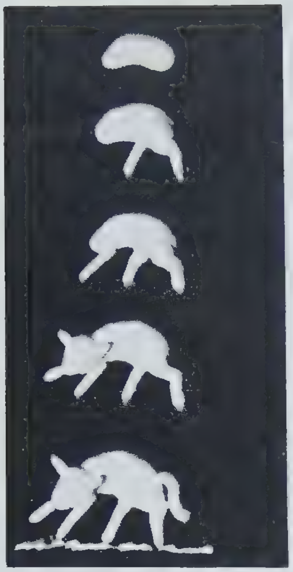


Fig. 20.38 *Piping Lambs, five stages.*

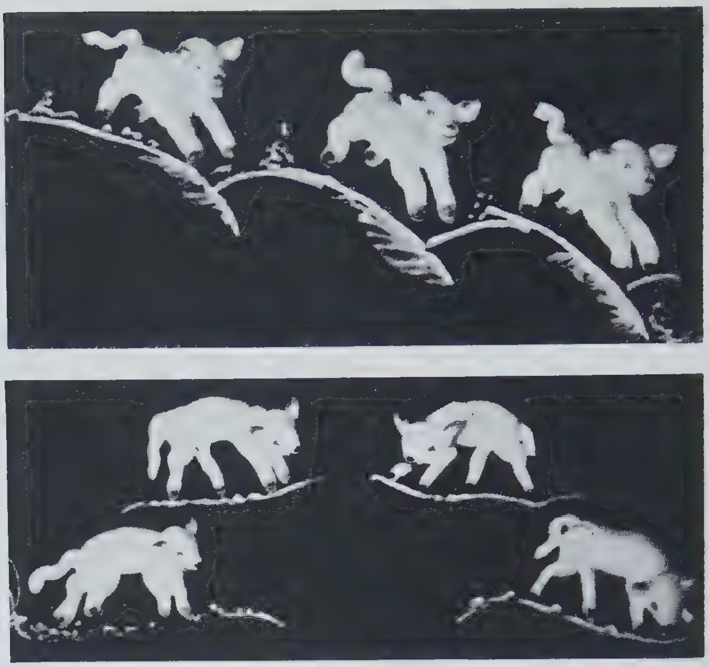


Fig. 20.39 *Positional.*

Hunting

It is most important with elaborate schemes first to decide upon the background, for upon this depends the type of scene we shall eventually design. Therefore, to give some idea of a hunting subject, a sugar background, be it a plaque or a cake top, would be most effective if iced in a pale biscuit colour, or even a pale coffee shade. You could at once imagine the red of the huntsman's coat set against the chocolate-coloured trunks and branches of the nearby trees, and the starkness of the countryside giving a perfect setting. Or again, a pale yellow iced background would be a suitable colour in a spring scene, for not only could the sky be shaded with light blue but the freshness of a spring morning could well be brought into being. With these details at our command the composition of a hunting scene can now be undertaken. Movement becomes another important factor, for the hunt may be shown in any of its many stages. However, we should first consider the scene, for it is basically composed of: (1) the action of the horses; (2) the positions of the hounds; and (3) the natural surroundings of the countryside.

GALLOPING HORSE

The outline of a horse with a galloping action is shown in the illustration. By means of a graph 1$\frac{3}{4}$ × 1$\frac{1}{4}$ ins. draw in the lines to give $\frac{1}{4}$ in. squares as this will enable the relative position of the various features to be fixed. Once the drawing is complete we see how to position the mounted huntsmen. Some practice will be necessary to achieve correct outline of this subject, and once the initial training has been overcome the question of altering positions must be developed. Next we have some idea of the grouping of the animals, and it is helpful if we can reverse some of the drawings to good effect. The inclusion of one or two hounds completes a not too elaborate but most effective scene.

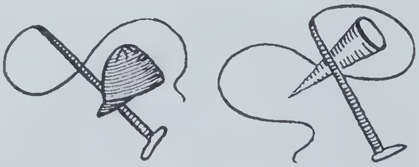


Fig. 20.40 *Cap and crop side panels.*

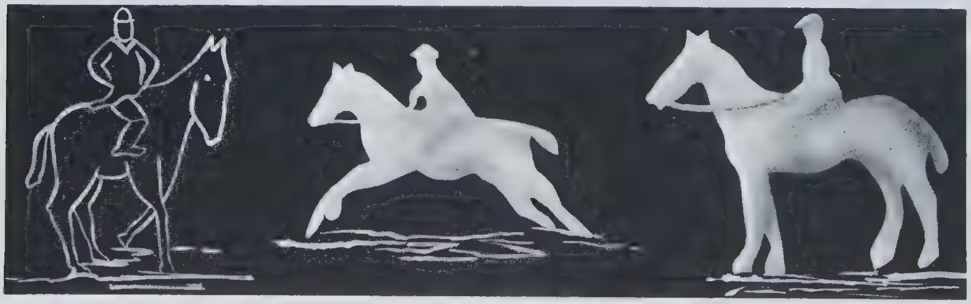


Fig. 20.41 *Horse and Rider. Horse outline in sugar.*

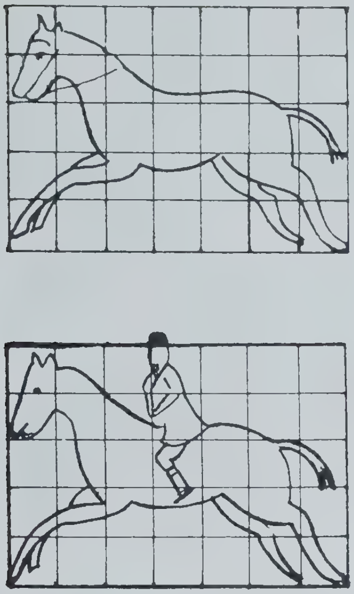


Fig. 20.42 *Hunting. Graph of Horse.*

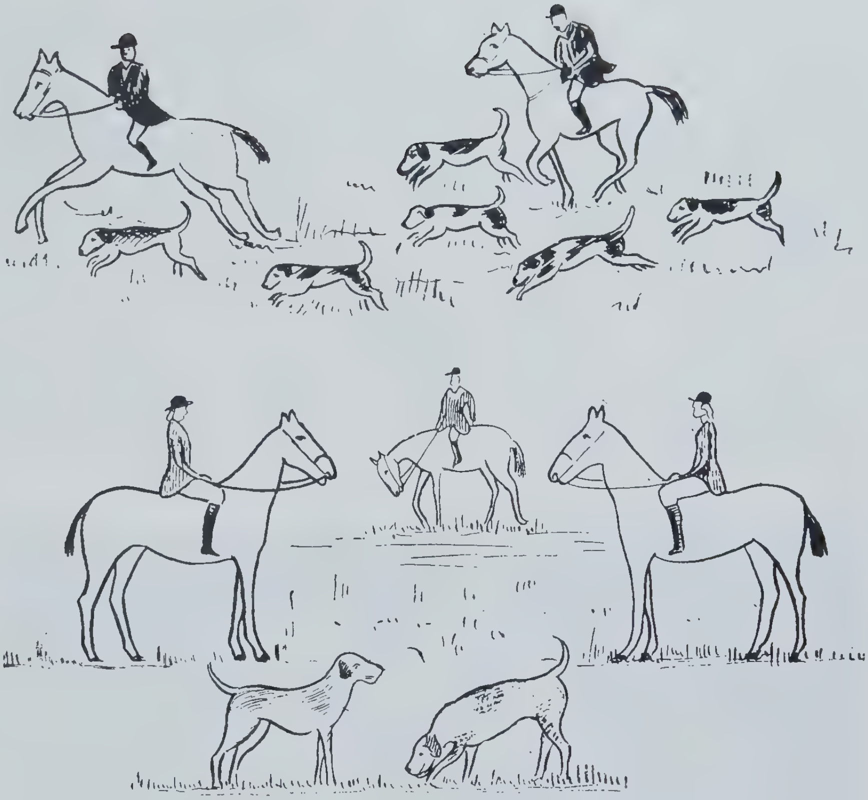


Fig. 20.43 *Various action pictures.*

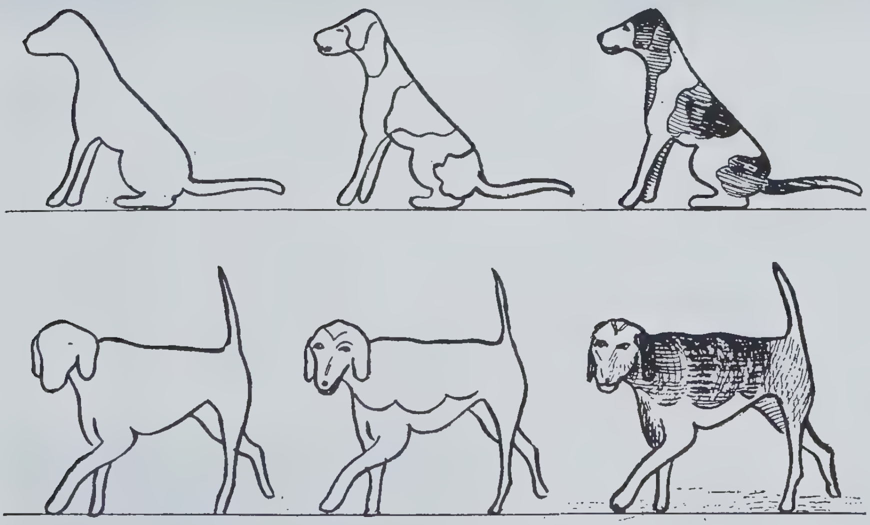


Fig. 20.44 *Outline and colour of Hound.*

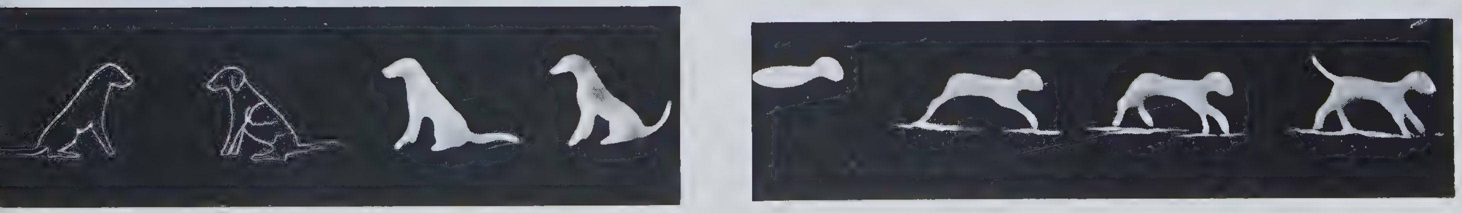
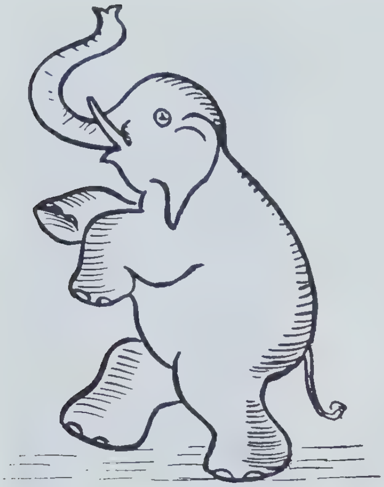
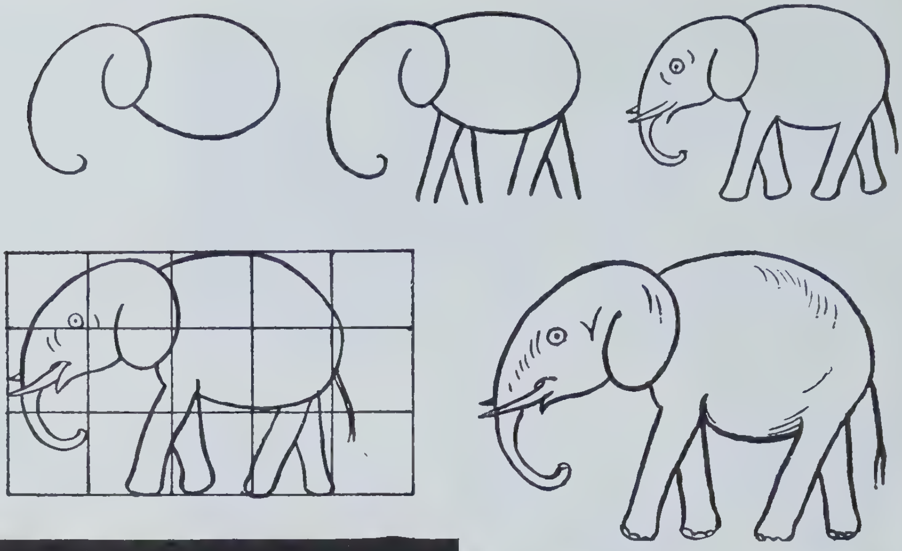


Fig. 20.45 *Outline and stages of piping Hound.*





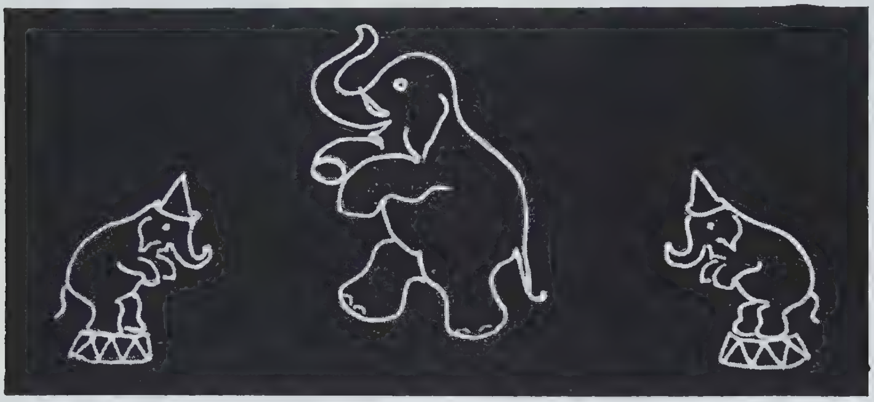


Fig. 20.46 *Three Elephant variations.*

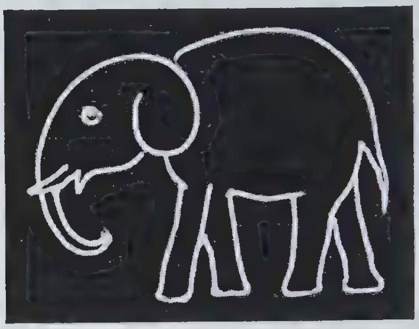


Fig. 20.47 *Stages in drawing Elephant.*

Illustrated are two positional features of a hound, built from the outline, showing the markings and depth of colour, while the next illustration shows the sample idea in sugar. Such items as that, and riding caps, are ideal for side panels.

Elephant

The illustration shows the elephant's normal posture. The basis of head and body are both elliptical, as shown in Stage 1, and once this basis has been formed the legs can be added at the respective angles. These lines in Stage 2 are more or less straight, but as the various additions are made the shape of the legs becomes more natural. The head features are now put in position as in Stage 3, and finally the light shading to give a rotund appearance. In practice the gradual build-up of such a figure is of immense importance, for correctness of line assures perfection of form. A still further simplification of the above sketch is possible. By commencing

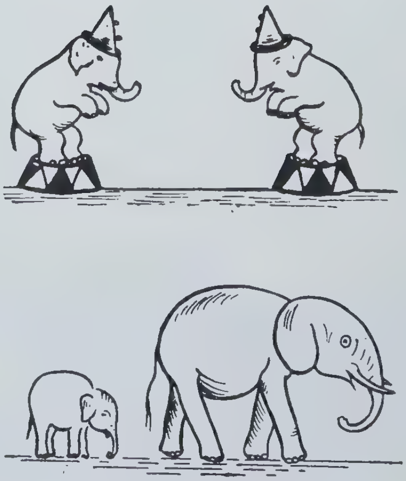


Fig. 20.48 *Elephant and baby.*

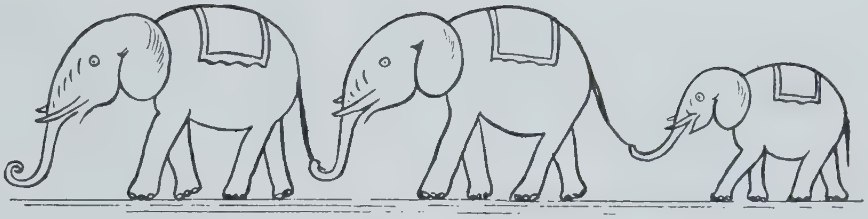


Fig. 20.49 *Procession of elephants.*

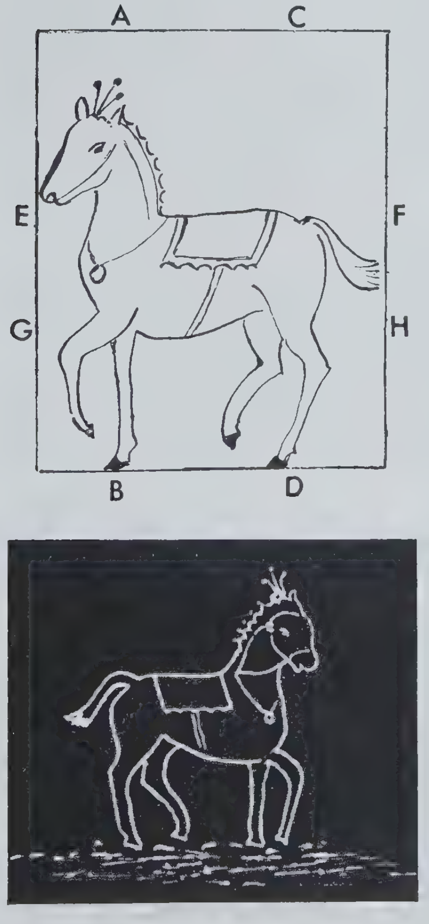
with a drawing of this description the beginner would have a great advantage. A rectangle $2\frac{1}{2} \times 1\frac{1}{2}$ ins. is drawn and then divided into $\frac{1}{2}$ in. squares which will give a clearer picture and a more accurate positioning of the various features. If desired we may even proceed a step further and draw the rectangle on $\frac{1}{2}$ in. graph paper, when it will appear easier to fill in the exact outline.

Repetition will help these drawings to be mastered and variations can more easily be accomplished. One such variation is shown. The drawing of the elephant has been reversed and with the same procedure a smaller elephant is made. Once again there is a slight alteration in the position of the trunk and leg, showing the baby in a standing position behind the larger animal.

Circus animals

Applying the same drawing principles we first show a circus horse with a slow-stepping action which conveys the idea that the animal is performing to a musical background. To assist in sketching, a graph 2 ins. long and $2\frac{1}{4}$ ins. high is required, this again being divided into $\frac{1}{4}$ in. squares, particular attention being given to AB, CD, EF, and GH, for along these lines some of the most important features are to be placed which will assist at the preliminary stage.

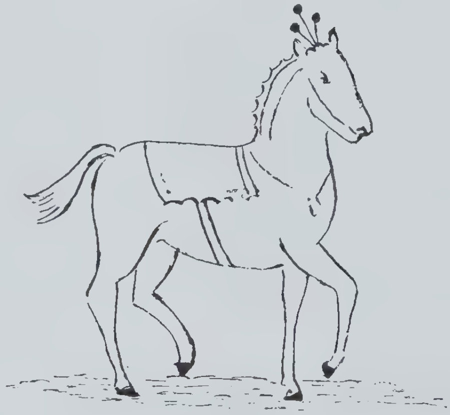
Once this has been achieved it becomes relatively easy to add the colourful trappings with which the horse is dressed on these occasions.



(Divide the rectangle into 7 squares wide and 9 squares deep, and join A–B, C–D, E–F, etc.)

Fig. 20.50 *Graph of Horse.*

Fig. 20.51 *Reversed by tracing.*



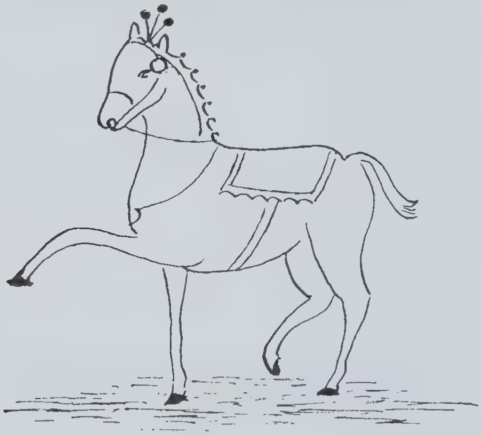


Fig. 20.52 *Positional change.*

The next drawing shows how the animal can be reversed by transfer, using tracing paper, for this will help in the formation of a team. Slight alterations will give a variety of different positions, and with experience many changes can be brought about by a simple alteration to the legs.

THE SEAL

Practically all kinds of animals have at one time or another been trained to perform in the circus, but perhaps one of the most popular performers is the seal, for this animal is able to appear very clever yet combines a touch of comedy. The seal, usually perfected in marzipan, has of recent years become a confectionery novelty, but for the application of sugar a flat surface will be illustrated rather than a sugar model. The make-up of a seal is as follows: draw a line AB $1\frac{7}{8}$ ins. with a vertical line E $2\frac{1}{4}$ ins. at a point $\frac{7}{8}$ in. above AB. Connect the points C and D. Divide the rectangle into five sections of $\frac{5}{8}$ in. each. Next join the points A, B, C, and D to E to give the position of the head, while the line drawn $\frac{1}{8}$ in. below AB will show how the flipper is positioned. Once the figure has been drawn it is comparatively simple to reverse it to show a typical circus act. Next the piped outline is ready to be filled in.

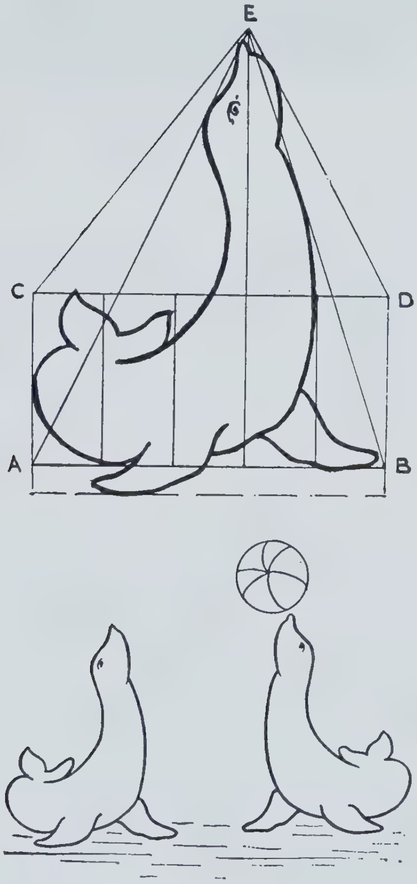


Fig. 20.53 *Seal graph.*

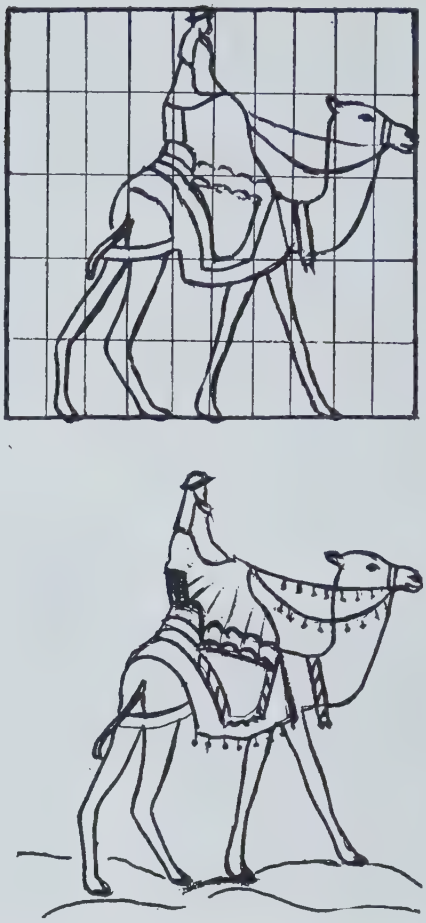


Fig. 20.55 *Camel and rider, with graph.*

CAMEL AND RIDER

The next illustration shows a single camel and its rider, perhaps a little more elaborate in design but this may be varied at discretion; however, by elaboration the choice of two types is made available. We then show how the same camel can be sketched by means of a graph. A square of $2\frac{1}{2}$ ins. is first drawn and divided

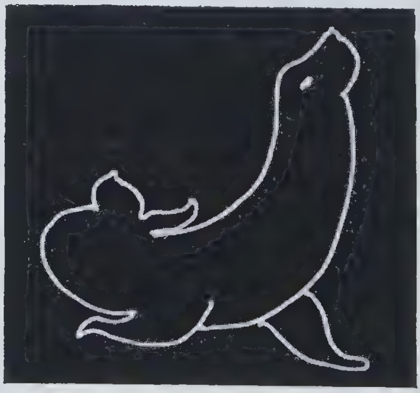


Fig. 20.54 *Piped Seal.*

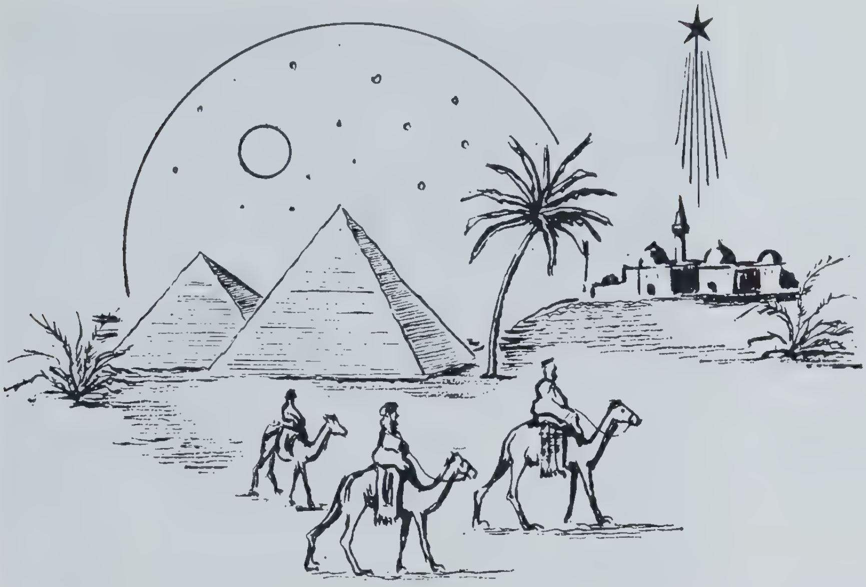


Fig. 20.56 *Typical desert scene suitable for cake top.*

horizontally into $\frac{1}{2}$ in. sections, and the vertical divisions are $\frac{1}{4}$ in. apart.

To finish the picture, the inclusion of a palm tree would be ideal.

Reindeer

Our attention is at first focused on the sleigh, for many types exist, yet one is able to design in one's own particular style. The first illustration shows a series of lines drawn vertically to the base AF, which is $3\frac{1}{2}$ ins. long. Each division between the lines is $\frac{7}{10}$ in. Line B = $1\frac{1}{2}$ ins., C = 1 in., D = $\frac{7}{10}$ in., E = $\frac{2}{5}$ in., and F = $1\frac{1}{10}$ ins. The line G is $2\frac{9}{10}$ ins. long and $\frac{2}{5}$ in. above the line AF. The next illustration shows the outline in the completed picture. Having drawn the sleigh, the outline is piped with a No. 2 tube and filled with soft sugar. One point here: keep the sugar rather on the firm side for the best results. The top section was commenced first, followed by the cornucopia-shaped end and finally the base.

The line shown at G in the drawing is again over-piped with a No 2 tube before setting away to dry. If desired, a sprinkling of castor sugar before transference to the drying cupboard will give a glittering, frostlike effect when dry. The main idea of piping with a No. 2 is to ensure sufficient strength in the sugar when taken from the wax-paper. This, as will be seen, is but a relief structure ideal for assembly on a flat surface, but if the drawing is repeated in reverse and then piped it is possible to assemble the two side panels and join them with a sugar platform for a model. This could, with care, be erected as a model for suitable inclusion of a window centre-piece.

We next consider the figure of a reindeer. Here again many variations can be made, but for our purpose I have shown as simple a design as possible. To commence, first draw a rectangle $2\frac{1}{2} \times 2$ ins., this being sub-divided into $\frac{1}{2}$ in. squares. From such a diagram it becomes much easier to fill in the relative positions of the animal. This will no doubt need some practice, for the reindeer appears to be the most difficult species so far introduced in this series, but with the aid of the diagram the drawing is simplified. Once the outline has been mastered piping can commence. Pipe the outline with a No. 1 tube and fill in with softened sugar. The body can be shown as a flat surface or can be piped with some soft sugar to show its various features. If the figure is meant to stand up, then the former method is the better. In the second, the largest weight of sugar is in the body, that is, at the top

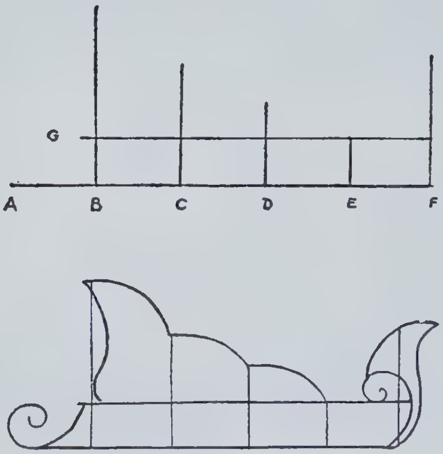


Fig. 20.57 *Sleigh and graph.*

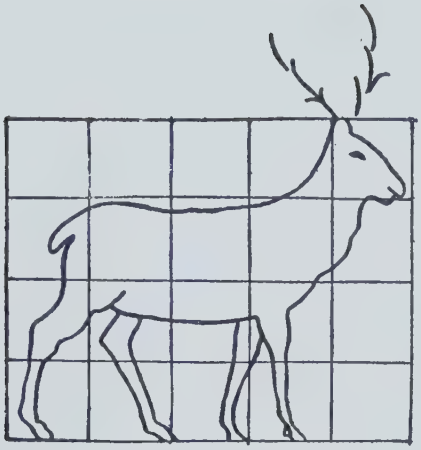


Fig. 20.58 *Graph of Reindeer.*

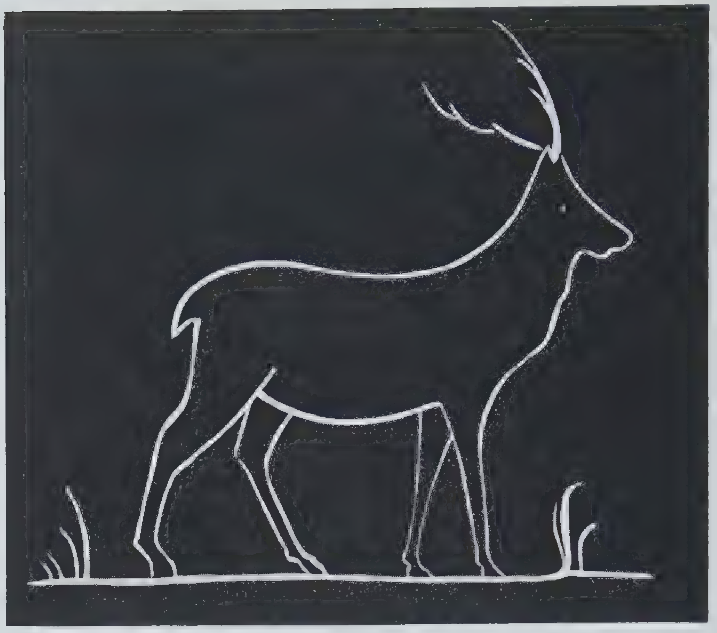


Fig. 20.59 *Outline piping.*

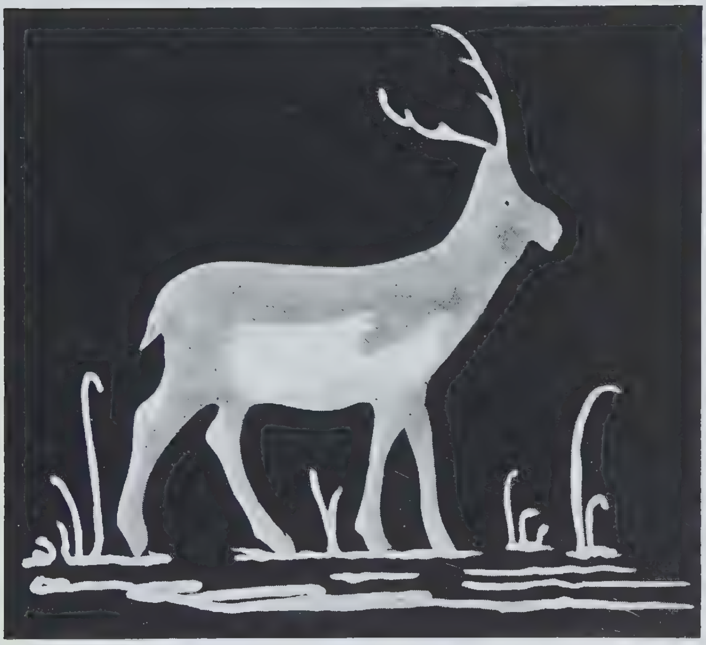


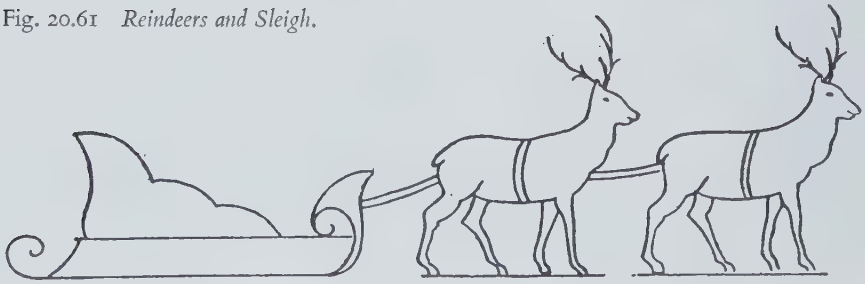
Fig. 20.60 *Piped and coloured Reindeer.*

of the figure, and so it would appear difficult to balance the body on the slender legs. In order to overcome this, pipe a double line along the base line and fill with soft sugar. This will give an added strength to the legs and allow the figure to be more readily eased away from the wax-paper when dry.

Two reindeer, as illustrated, with the sleigh, give a half-relief scene and are suitable for a flat surface. Where a double sleigh or model has been set together, it is possible to add two more reindeer, placing them side by side. With the addition of a little rock sugar on a snowy base and the inclusion of a fir tree here and there, many attractive scenes can be produced.

Colouring of reindeer can be carried out by one of two methods. In the first, the animal is piped with white sugar and, when dry, lightly coloured on the back by dipping a small cotton-wool pad into cocoa powder. This is dusted over the back very carefully and shaded so that the lower portions remain white. Secondly, the soft sugar could be tinted a pale chocolate with a spot of french pink added to brighten the finished colour. The underside of the body should be white and gradually merged with the chocolate sugar. With the sleigh all sorts of variations can be made, but here it must be left to the designer's personal taste.

Fig. 20.61 *Reindeers and Sleigh.*



21 *Figure Piping*

We have now gained some experience with the piping of birds and animals and have arrived at the stage where we introduce figure piping, a fascinating and interesting hobby with unlimited possibilities.

Exhibition motifs

Figure motifs are mostly used in the exhibition type of cakes, and unless they can be made fairly quickly their commercial use is very limited. Four items have been selected to give some idea of what can be done, and the crinoline lady has been drawn freehand and is intended to be piped direct on the cake. The remainder it is proposed to pipe on to wax-paper. Before proceeding in too great detail it is as well that we should be acquainted with basic factors which will undoubtedly assist us in this work. Wax-paper should be thin so that the piping can be peeled away easily and the drawing seen quite plainly through it.

PIPING DIRECT ON TO CAKE

Throughout this operation only minute quantities of coloured sugar are needed, so only make sufficient to fulfil your requirements. The paper bag should also be correspondingly smaller, and if it is tightly made with a very fine hole cut at the end, the outline can be piped by following the line with the piping end. This refers to small compact figures, and the first operation is to pipe over all the dividing lines; this should be allowed at least to skin over before the various sugars are filled in. Sugar consistency will vary, and upon this we depend for giving depth to the subject. The face, arms, and legs are the forms which are piped in first, for as the limbs are added varying degrees of boldness will be required, but never so bold as to cause the figure to look out of proportion, just sufficient sugar to give a suggestion of boldness. Soft sugar for the limbs is made by adding a little french pink plus a spot of lemon yellow. Remember we are dealing with small amounts, so colour must be treated likewise.

Use of Colour

Flesh colour has just a little more pink in proportion to yellow, and this will soon be determined with practice. Soft sugar also dries darker so this must also be taken into account as this is most important with the colour of the flesh. A paler colour can always be made to look more natural with added colour when dry, but nothing can be done if the colour is too strong in the first place.

The dress or clothes are not so important, for quite often added colour is brushed on as a means of giving the correct shading. The use of a paint-brush is invaluable in maintaining the indentations. As with all figures, the facial features are the first to pipe, and while the general outline looks flat the cheek is the only feature at this stage to be given prominence. Other features should be added when the face is dry. The second items are the

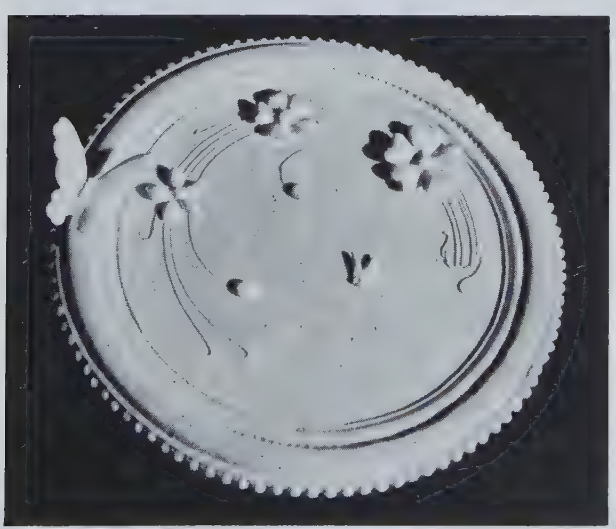


Fig. 21.1 *Butterfly plaque, showing butterfly perched on rim.*

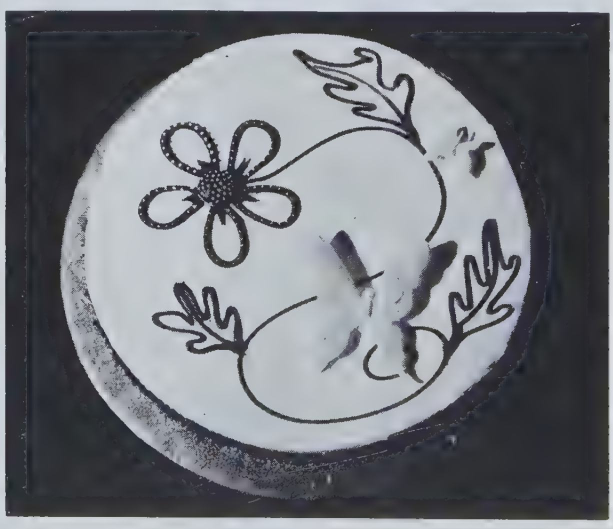


Fig. 21.2 *Another Butterfly plaque.*

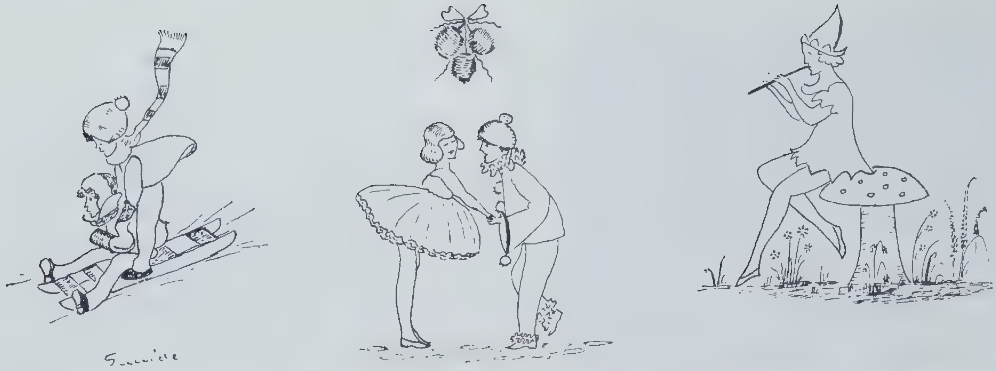


Fig. 21.3 *Drawings of figures.*

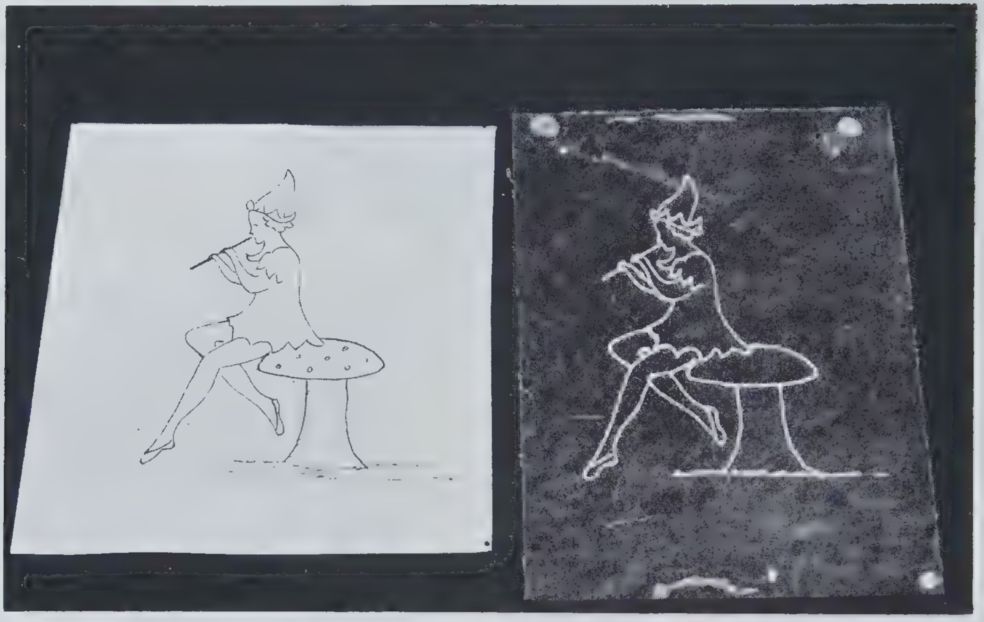


Fig. 21.4 (*Left*) *Drawing on greaseproof.*

Fig. 21.5 (*Right*) *Outline piping.*

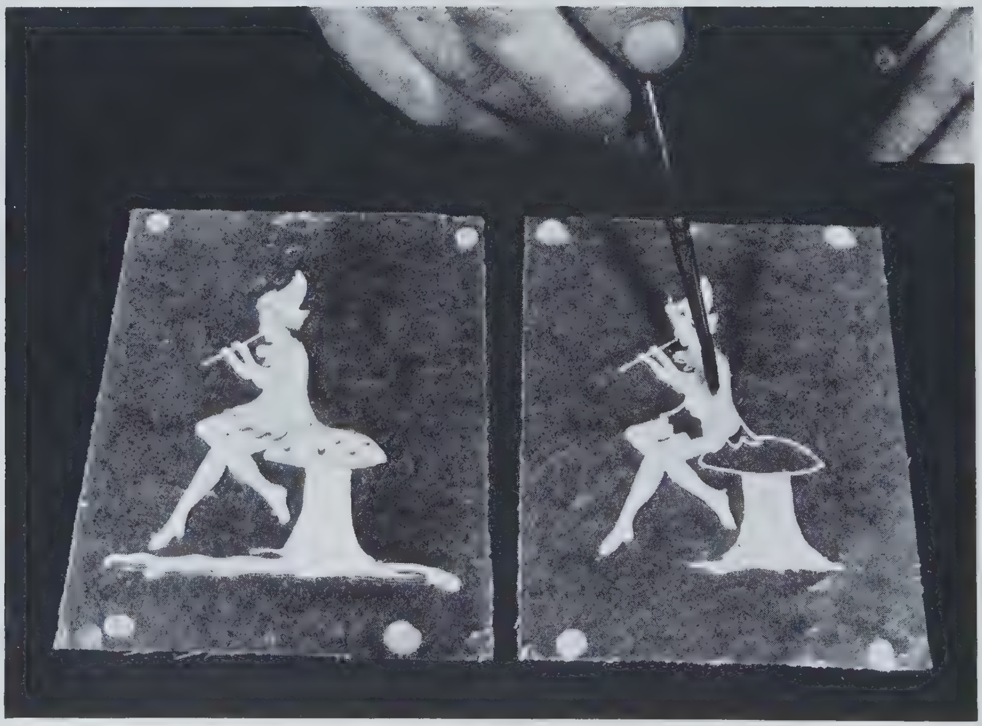


Fig. 21.6 (*Right*) *First stage of filling in.*

Fig. 21.7 (*Left*) *Completed figure.*

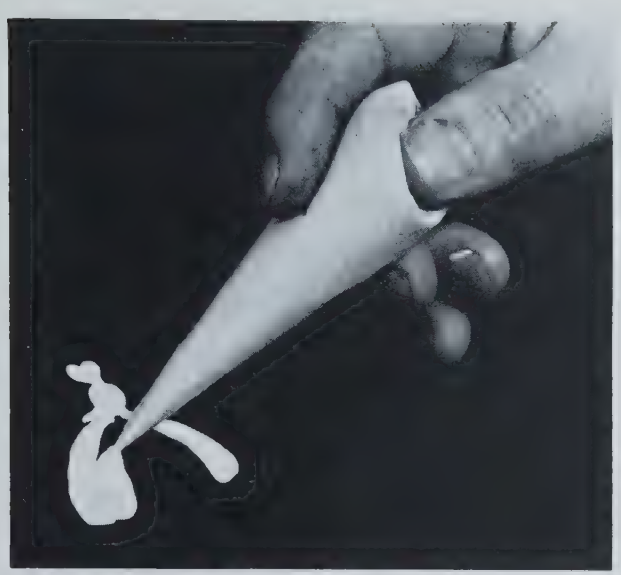


Fig. 21.8 *Direct piping of crinoline.*

arms, hands, and legs, but where limbs are crossed the one underneath is piped in first with a minimum of sugar so as to allow for the boldness of the piping of the upper limb. Where possible, to get the best results allow a little time for one limb to set before adding the other. By the time the face and under limbs have been piped, you can finish off the hair and hat. Next come the upper limbs and lastly the dress or accessories.

Always aim to make the limb nice and rounded by filling the sugar to the top of the outline, and be sure to give a gradual but graceful curve. When the figure is dry the naturalness may be further improved by the addition of colour.

Crinoline Lady

The crinoline lady may be piped either by first outlining then filling in, or with a semi-soft sugar the consistency of which must be soft enough to give a smooth, bold shape yet firm enough to allow the crease or fold of the dress to be made with a paint-brush. Although the same consistency of sugar is used throughout, it is surprising how this sugar can be reduced or shaded away by brushwork. First the poke bonnet is piped and then the boldness of the rim; the body is then shaped with the gentle movement of a brush, after which the arm is given its true fullness.

The crinoline is piped with a large tube to enable the pressure to form the shape. You begin at the base, gradually reducing to the waist. Pipe the two outer sections, then gradually work to the centre. The folds can be further emphasized by brush marks and the decoration on the crinoline bodice added in a contrasting colour of sugar when dry. The criss-cross paving is in lines of green and chocolate, and miniature flowers or blades of grass are easily inserted. After this figure has been practised you will find it very easy to pipe it direct on the cake, and once the fundamentals have been learned it will become just as quick as the formation of a rose or flower spray: certainly a commercial proposition and not difficult to modify.

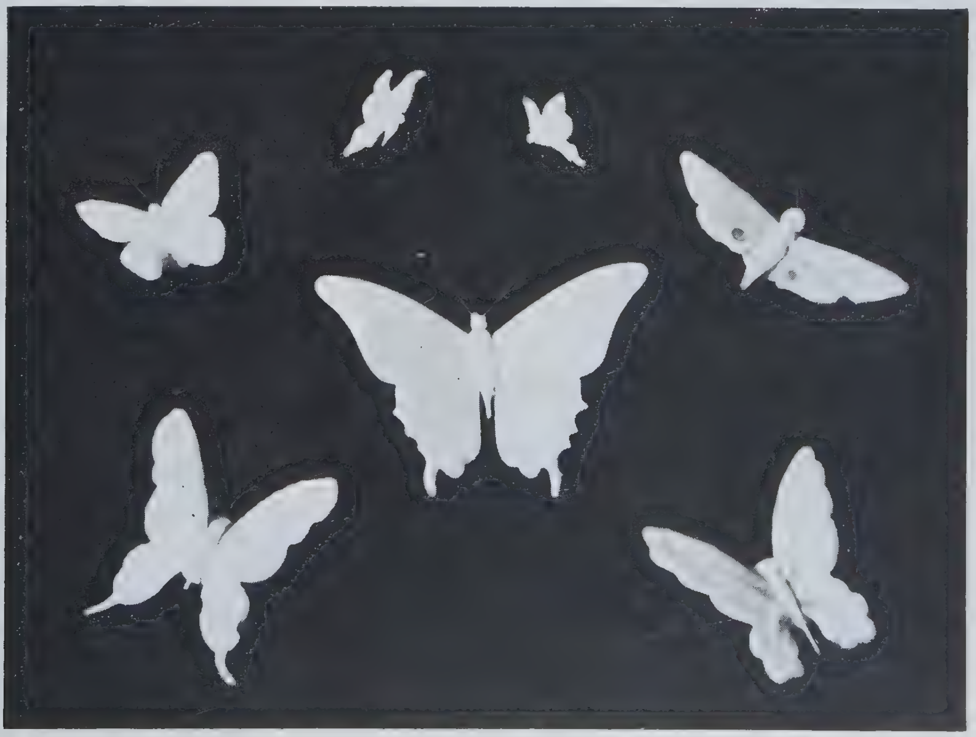


Fig. 21.9 *Various sugar Butterflies.*

Fig. 21.10 *Butterfly drawings.*

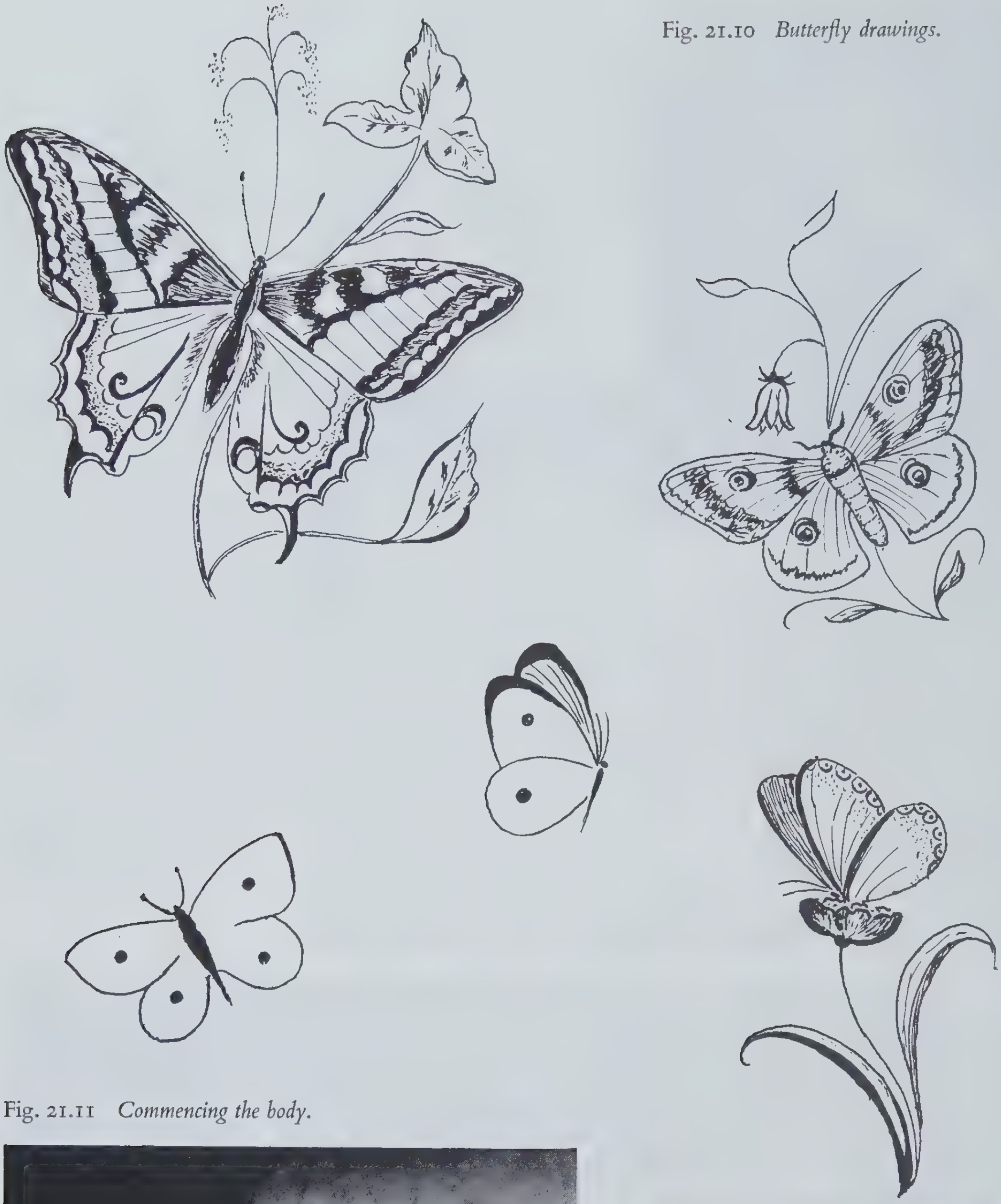


Fig. 21.11 *Commencing the body.*

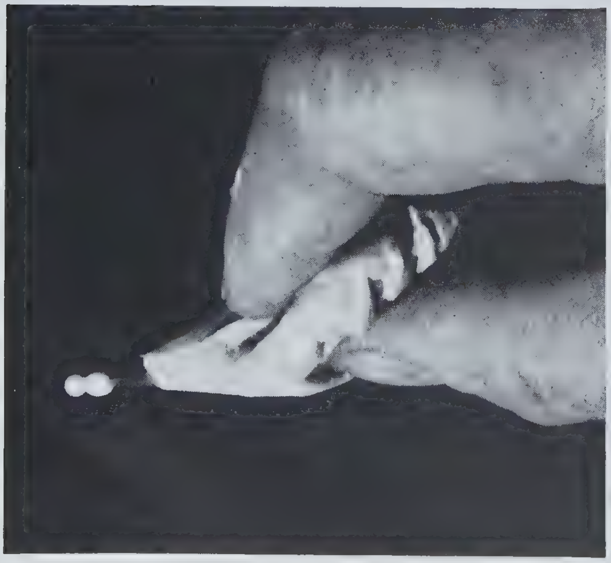
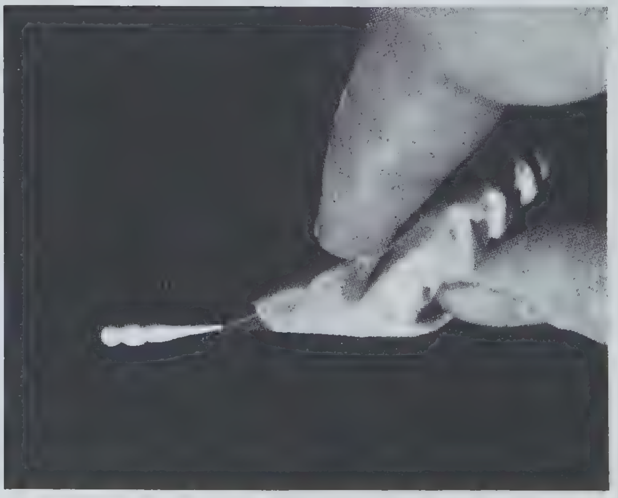


Fig. 21.12 *Completing the body.*



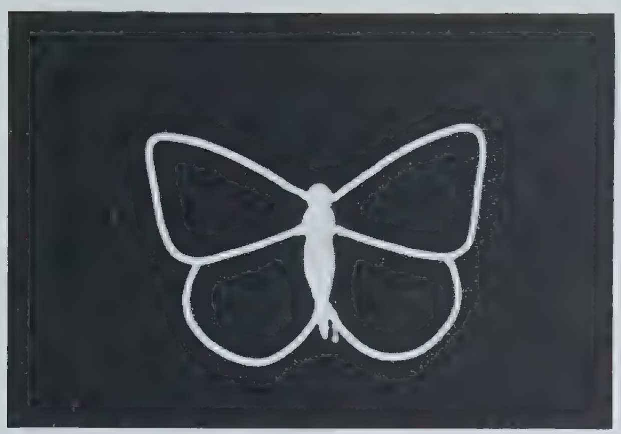


Fig. 21.13 *Outline piping.*

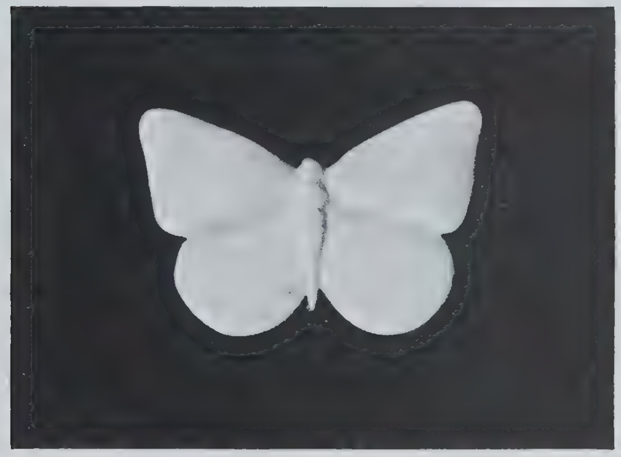


Fig. 21.14 *Filling in.*

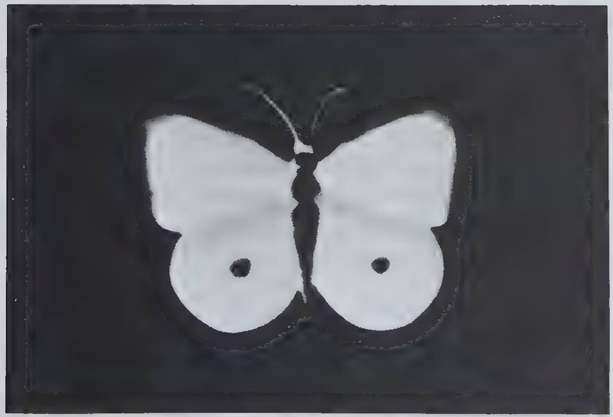


Fig. 21.15 *Coloured Butterfly.*

BUTTERFLIES PIPED ON WAX-PAPER

Quite often we see a butterfly incorporated in the more advanced floral designs.

Butterflies vary so greatly in colour and shape that it is possible to design one that will give a daintiness to the finished cake.

Many of the English varieties are quite suitable, from the more complicated Swallow Tail, Peacock, or Red Admiral, down to the most common of all, the large white. First select the specimen and make a drawing to represent the shape, and this is then divided into two sections, the wings and the body, each to be piped separately in the basic colour chosen to blend or contrast with the sugar base. These are piped on wax-paper and set aside to dry, when the colour is added, and this may be the full natural colouring or just the wing tips are coloured. The main point is the assembly; the two wings are secured with a little stiff icing and supported on the underside to give them the correct position. When this has been done the body is secured and put in place with a little sugar.

When a butterfly is to be kept away from the cake the antennae must be secured to the sugar under the head. One way of doing this is to trim the minute stems from asparagus fern, making sure to maintain the right curvature. Markings on the head and body must also be added. The butterfly should be firmly set before it is put on the cake.

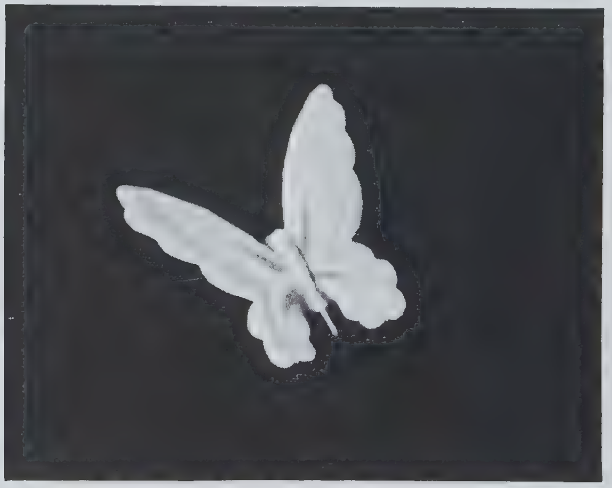


Fig. 21.16 *Small Butterfly.*

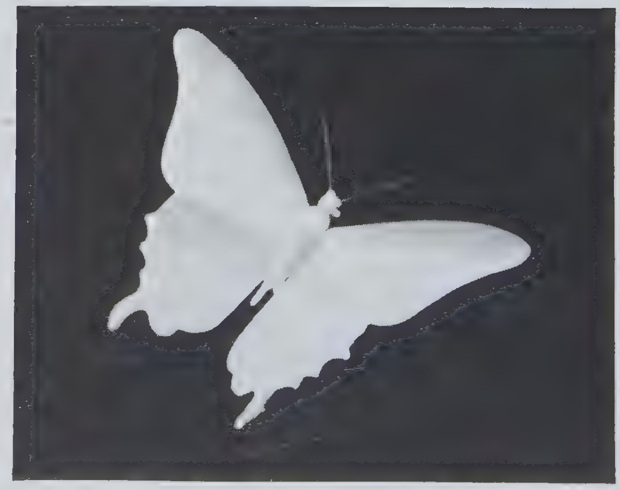


Fig. 21.17 *Larger Butterfly.*

22 Colour Craft

One of the most ancient of all arts, painting and the perception of colour yields many of us more satisfaction and joy than any other.

A wide range of designs can be carried out with the pencil and brush which would be beyond the skill of sugar piping. A good working knowledge of colours is essential to the beginner in this art as applied to the confectionary trade, to enable him to use the edible bakery colours to their best advantage.

Elements of painting

Painting comprises four distinct elements, namely invention, composition, design or drawing, and colour. *Invention*, the first of these, undoubtedly comes as a gift of nature, and one at once realizes the impossibility of communicating it from one person to another. How this may be improved can be learned from books or teachers but how to obtain it cannot be defined. Without this gift one cannot hope to be more than a mere copyist. Successful invention requires a large fund of ideas and imagination, and naturally it takes considerable time to accumulate the fundamental knowledge which the mind needs as a basis.

Composition is the arrangement of various parts of a picture to form a consistent and harmonious whole and is thereby closely related to invention. This is determined by the first sketch for the picture. If it is not good originally, no amount of finish, detail, or colour will make it successful.

Design and Drawing is the most important aspect and essentially the foundation of all good art. Outline must be the first stage to be perfected otherwise one cannot hope to obtain a good finish. One should cultivate the art of faithfully producing the chosen design as it appears to the eye.

In all spheres of art, light and shade are most important factors, for it is by this means that space, breadth, depth, and naturalness are created.

Colour charts

There are many ways of formulating a colour chart whereby full colours and their respective hues may be seen and memorized.

PRIMARY AND SECONDARY COLOURS

In Fig. 22.1 we are shown the primary colours A, B, and C, together with the secondary colours D, E, and F. Here we find our chart divided into six bright colours which may be termed central hues. It is from these central hues that we are able to assess the relative tints or shades.

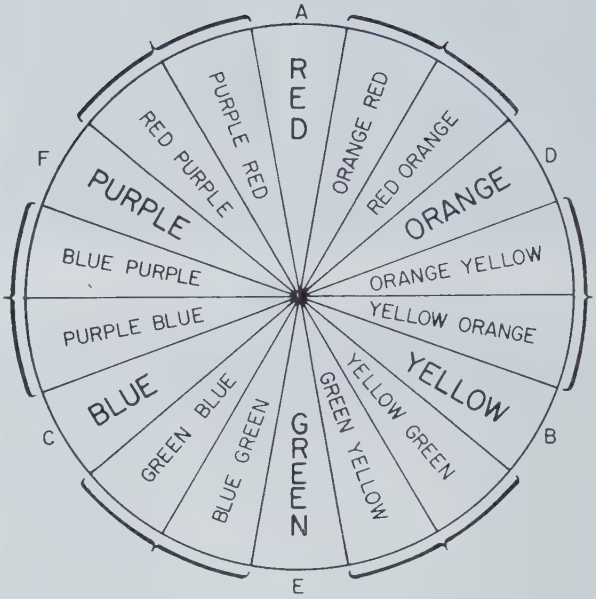


Fig. 22.1 *Colour charts.*

Now let us examine any two colours, either primary or secondary, and see the resultant tints. Red and yellow are, shall we say, the brightest, i.e., the eye is attracted by these colours more quickly than by the others. If red and yellow, two primary colours, are mixed together in equal quantities the resultant colour would be

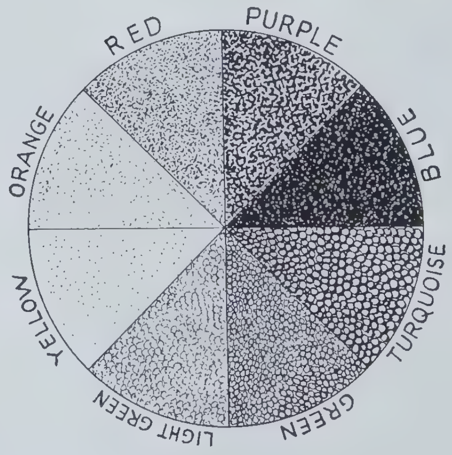


Fig. 22.2 *Warm and cool colours (contrasts).*

secondary, in this case orange. Now if two parts of red are mixed with one part of yellow it will be shown in the chart to be an orange red, i.e. the predominant colour is red. On the other hand, if two parts of yellow are mixed with one part of red, then yellow orange or yellow will be the predominating colour. By using this method the colour chart becomes an aid to memory and colour combination.

In Fig. 22.2 colours roughly fall into two categories, warm and cool. If a line is drawn across the circle from yellow to turquoise, it will be found that half of the colours are warm and the other half cool and spring-like. A few notes indicating their special use would be well worth remembering:

Yellow for sunshine, cheerfulness
Orange for noon, liveliness, joy
Red for evening, excitement
Purple for royalty, sadness
Blue for water, quietness, coolness
Green for spring, freshness

Similarly we should make a study of contrasts in colour. In Fig. 22.2 the chart is divided into eight colours, viz., yellow, orange, red, purple, blue, turquoise, green, and leaf green. A combination of any opposite colours gives us a contrast in brilliance and it should be noted here that colours add their complementaries in the chart to their surroundings. For instance, let us examine red and its position in the chart. It will be found that its complementary is leaf green, which is borne out by nature time and time again.

NEUTRAL COLOURS

Neutrals are based on black and white and by various admixtures it is possible to tabulate these as in the case of colour. Black is defined as the absence of reflection of full light. For our purpose a range of five neutrals should be sufficient to illustrate the change in tone. In Fig. 22.3 we commence with black full colour at the top of the table and white at the bottom. By mixing equal quantities of black and white we arrive at grey, which is found in the centre section of the table. If an equal quantity of black and grey are blended together then we have produced a dark grey, while at the lower end if white and grey are mixed in quantities the shade produced is pale grey.

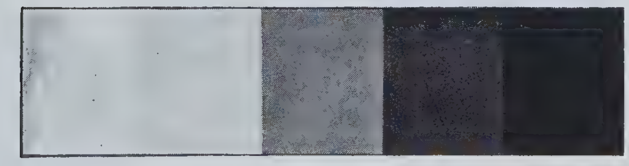


Fig. 22.3 *Neutrals.*

This example can naturally be extended if required, for in mixing black and white in this manner we are assured of an equal gradation. At this stage it must be remembered that colours when mixed with white increase in luminosity and are known as tints, while colours when mixed with black decrease in luminosity and are known as shades. Neutrals are used to soften contrasts. Harmony is obtained when a satisfying combination is made with adjacent colours and colours of close affinity. To add interest to a two-colour harmony use the immediate opposite in the colour chart.

It is important to use only the finest quality materials for colouring. Sable brushes are by far the best for painting. A little extra expense in this direction is well worth while. A good brush, immersed in water, then given a flick by the hand should form a perfect point.

Edible colours

Having studied and gained some working knowledge of colour hues and tints we are now able to turn our attention to the manipulation of edible bakery colours.

Three main colours are at our disposal in our everyday work: egg yellow for cake-making, cochineal for icings, and blue for royal icing. Here we have a foundation upon which to build in the same way as with the inedible colours.

Usually these colours are either purchased in powder form or made up ready for use. One advantage of powder colour is that greater strength can be obtained, while the liquid colour can only be weakened by the addition of water. Fortunately many additional shades are on the market which, to a certain extent, eliminate the necessity of blending.

Cochineal

Let us study these three colours for a moment. Cochineal, in many instances, is a red with a bluish tinge. Here I do not speak of the product itself but of how the colour strikes the eye. Therefore, if yellow or egg colour is mixed in equal proportions with cochineal, we could not hope to produce a true orange. I would suggest that for the purpose a french pink would lend itself more readily to mix with egg yellow, although there are other shades obtainable, such as lemon, primrose, etc.

Greens in many shades can be purchased, and personally I prefer apple green, which usually has a yellowish tinge, while other greens vary in tone and are somewhat subdued.

Other colours available include orange-yellow, chocolate, carmine, rose-pink, and mauve. With this great variety of shades at our disposal our task of producing something artistic becomes simplified and more speedy. Chocolate is our only means of darkening a colour to give depth and, in the absence of white, our only way of lightening is water.

At this point I may add that many of the advertised colours, although excellent, are not necessarily all the same, i.e. there are no standard hues from a manufacturing point of view and it will be for you to choose the colours which will suit your requirements. Neither do I recommend the use of colour and flavour combined, nor any colour which appears to have been thickened.

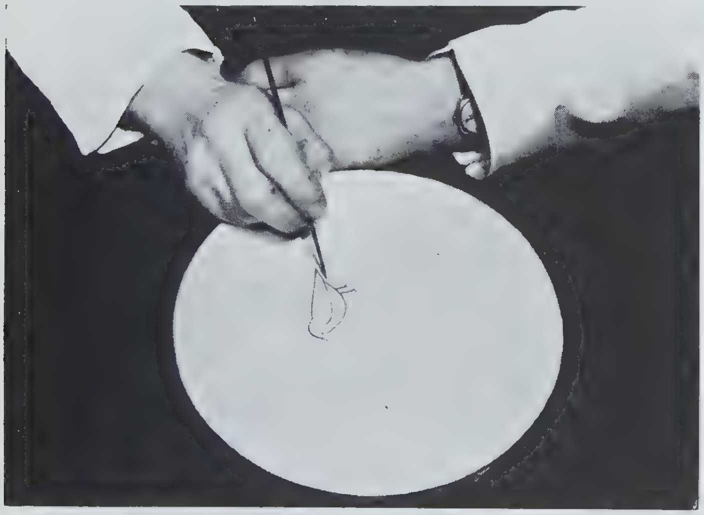
FIRST ATTEMPTS IN COLOUR

We can now proceed to attempt something in colour. Throughout, two brushes will be used and, at a later stage, a third will be introduced. First, a fine brush, which will be used for outline and fine details; and secondly, a medium size brush for general colouring.

We must keep in mind that decorations are to beautify the cake and not necessarily a means of covering the surface. First let us imagine a birthday cake of standard size say, 7 ins. or 8 ins. in diameter. Usually, apart from the borders, the decoration consists of a name or inscription together with a spray of flowers or a marzipan rose. Almost any type of floral decoration can be executed in colours.

The type of colouring for the flowers must be determined by the base colour of the cake, or if a specific flower is required, then the base colour of the cake must be a contrasting one, to show the flower to the best advantage.

Remember, we cannot add white to these colours, so



Figs. 22.4–22.10 *Stages in painting Robin on a branch.*

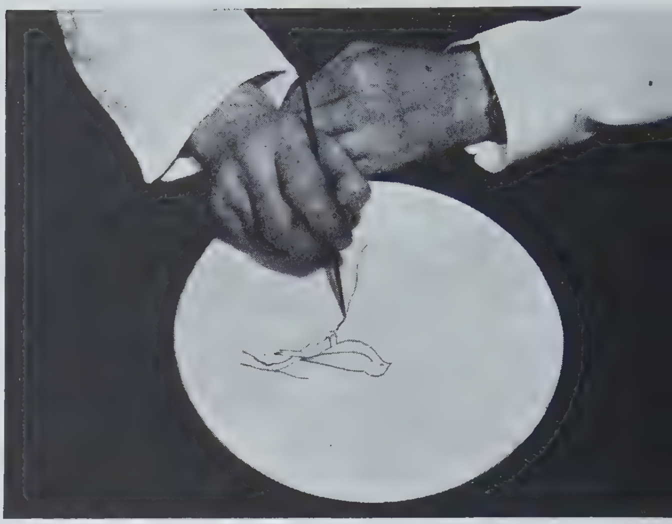


Fig. 22.5

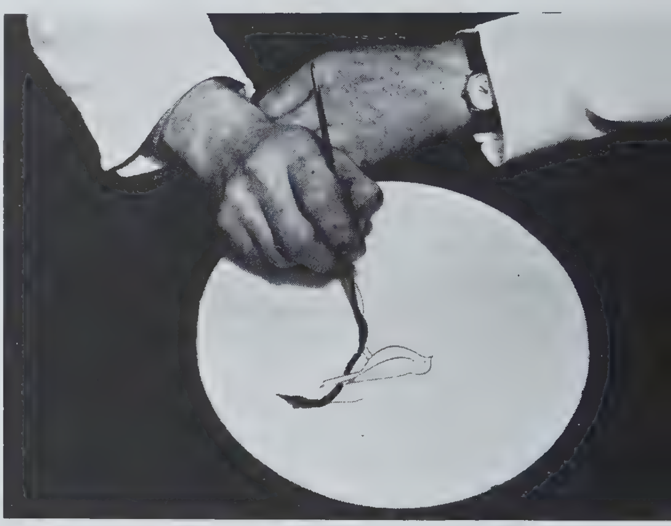


Fig. 22.6

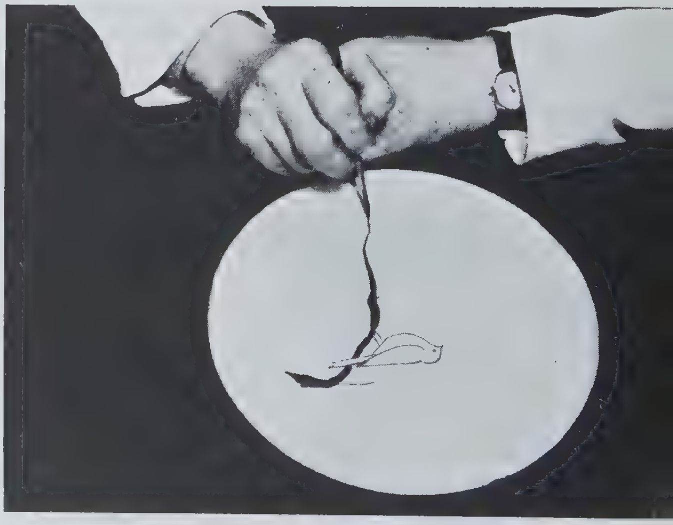


Fig. 22.7

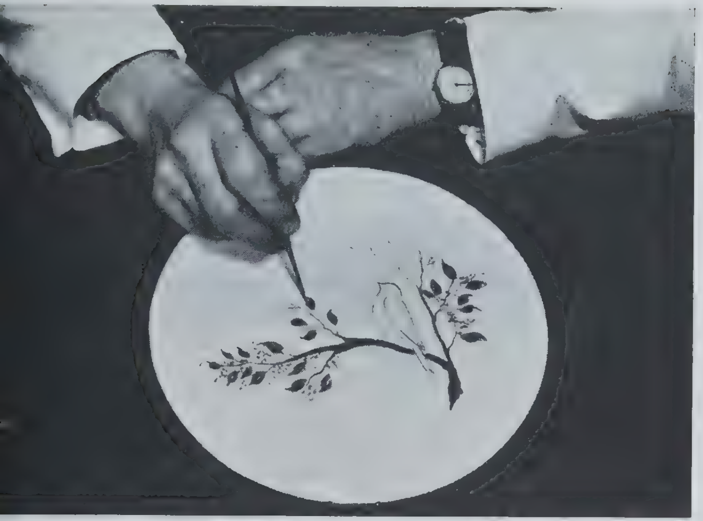


Fig. 22.8

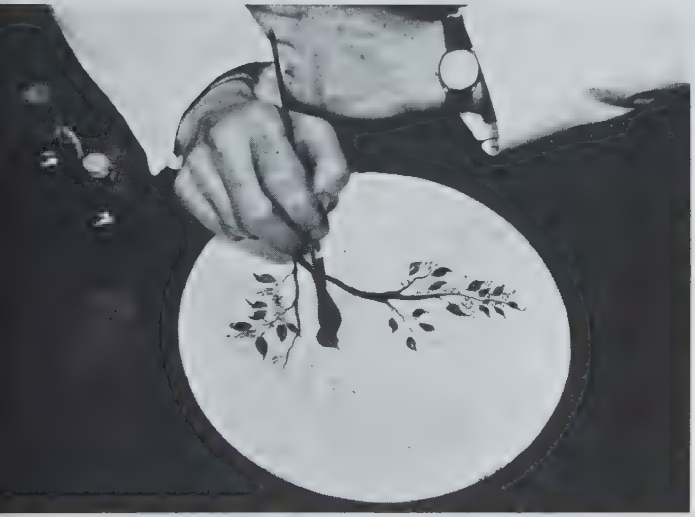


Fig. 22.9

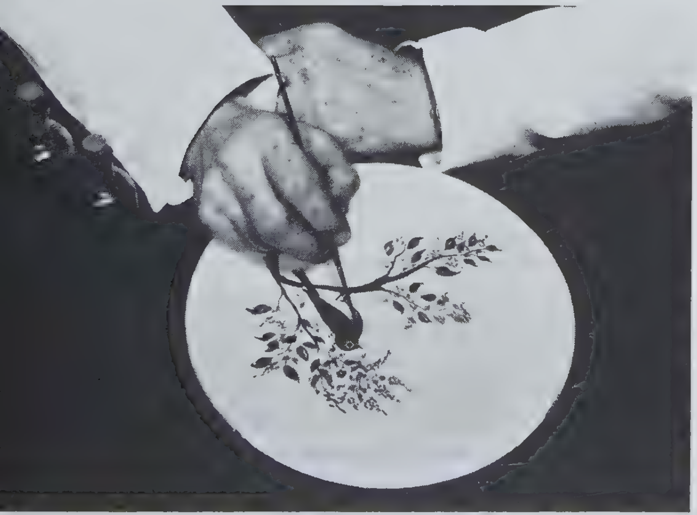


Fig. 22.10

that flowers in which white predominates are only produced by having a white background or base. At first it is not advisable to attempt to paint flowers, birds, or scenes without some pattern to copy. Many are obtainable at any good art shop. These will not only give a true outline, but also an idea of colours to be used.

Bird life

As an added attraction, with flowers we can introduce bird life. Two of the most popular British birds are robins and blue tits, which suit our requirements admirably and make a good contrast. (See also Chapter 19 on birds.)

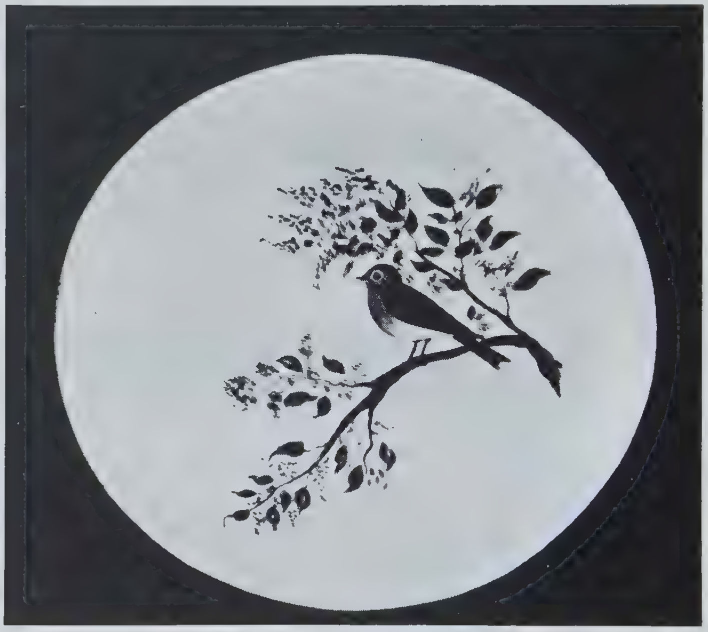


Fig. 22.11 *The completed design.*

ROBIN ON A BRANCH

Fortunately, in our decorating trade, a robin is of interest all the year round. In a picture of this type it is essential that the position of the bird be first determined, as it will then be much easier to add the foliage to the best advantage. However, some idea must be in our minds as to whether the growth is to take on an upward or a downward trend as on this the position of the bird must be based. For example, let us take the robin first as it is more generally associated with us. Having conceived its position in our mind we begin to sketch the bird faintly with a firm paint-brush in chocolate colours (Fig. 22.4).

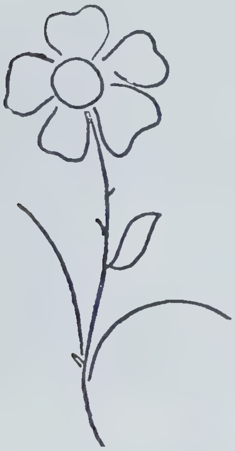
Next, sketch the branch in such a manner that the legs of the bird appear to be perched (Fig. 22.5). The varying thickness of the wood is painted with the medium brush (Fig. 22.6). Notice how the brush, under pressure, forms a wide outline and how, when the pressure is released, the line gradually diminishes (Fig. 22.7). Perfect control of the brush is therefore essential. Twigs of smaller proportions are then added before finally painting in the green foliage (Fig. 22.8).

The head, wing, and tail of the bird are now coloured a rich chocolate (Fig. 22.9), that is, with chocolate colour to which a small quantity of french pink has been previously added. The eye is surrounded by a tinge of yellow colour, which should create boldness and also the rounded appearance of the head. Lastly, the red breast is brushed in (Fig. 22.10) with french pink to which a little egg yellow has been added. We now continue with the branch and twigs. Fig. 22.11 shows the completed design.

A knowledge of elementary colour decoration has now been attained and should prove sufficient to form a basis from which to build up a variety of designs.

Flower studies

A popular flower for use on confectionery is a wild rose, which is illustrated. Fig. 22.12 shows the flower outlined faintly in french pink with the fine brush, after which the stalk and leaves are painted faintly with chocolate colour. As will be seen in the illustration, the outline appears flat and uninteresting.



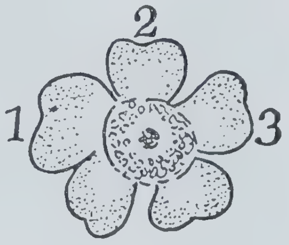


Fig. 22.12 *Rose. Flower only.*

Fig. 22.13 *(Left) Outline, Wild Rose.*

PAINTING A WILD ROSE

It is through the addition of colour that we are able to make a more realistic reproduction. Fig. 22.13 shows the flower only, on a larger scale, and how the colour shapes each petal. Petal No. 2 has the deeper colours on the outer edges and is shaded to the centre with a little water, which gives it a cup-shaped appearance.

When using water on a sugar base for shading, the brush should first be wiped on a dry, clean cloth to take off the surplus water. Excessive use of water on sugar will soften the surface. Petals No. 1 and 3 show how the colour gives a petal a realistic curl or bend. It is apparent that excessive colour must not be applied at the outset. It is much easier to add a little more than to try to brush off the surplus and mar what might have been a good beginning. Having produced the flower, the stem and leaves are then added (Fig. 22.14). When painting the leaves with apple green, have one side of the leaves darker than the other, thus showing the reflection of light.

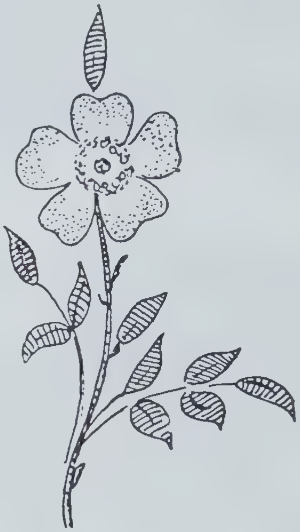


Fig. 22.14 *Rose sprays.*

SPRAYS FOR BIRTHDAY CAKES

When a flower and foliage of this description are once mastered it becomes fairly easy to take all the separate items and arrange them into a spray to suit a particular design. Birthday cakes, usually round in shape (Fig. 22.15), should have a spray in a semi-circular position, so keeping it quite distinct from any inscription. Nevertheless, not every flower can be portrayed in this way; the natural growth must be considered; some have a more upright or stately growth and would appear unattractive and out of place in a semi-circular position. For this type it would be much better to divide the cake with a perpendicular line down the centre. On one side the spray could be painted, while on the opposite side the desired inscription could have a name inserted such as Iris, Rose, Daisy, Violet, or Heather, which would be greatly enhanced by the addition of the respective flower.

Almost every flower, however complicated, lends itself to reproduction, but we must remember that

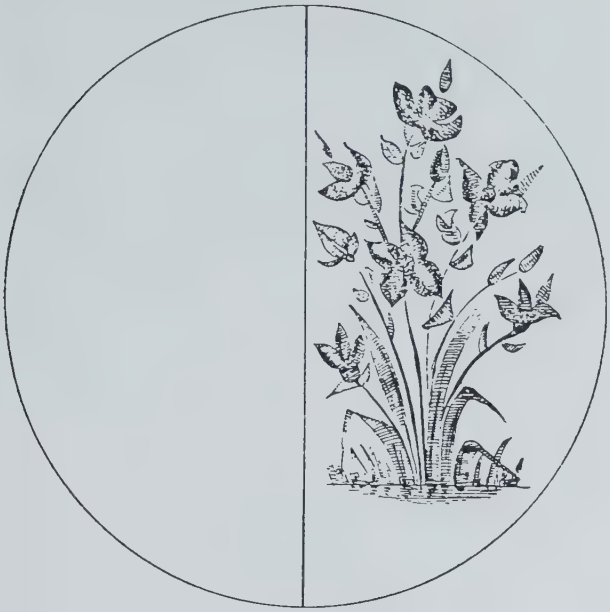


Fig. 22.15 *Flower arrangement for one half.*

although this may be excellent practice, it is important also to keep the commercial aspect in view.

Illustrated are four different flower studies, namely, crocus, anemone, tulip, and fuchsia. Each study is portrayed as faithfully as possible, in order to create a natural impression.

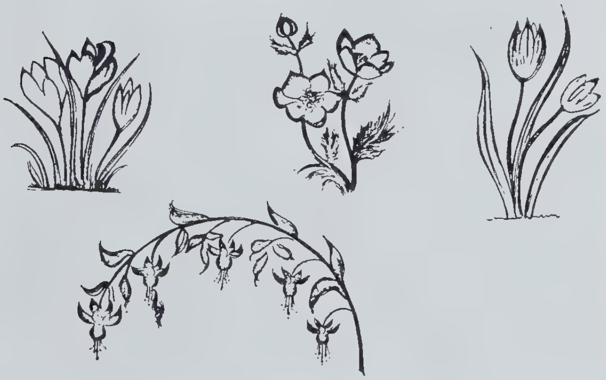


Fig. 22.17 *Flower studies: Crocus, Anemone, Tulip, Fuchsia.*

Painted butterflies. Similar flower studies may be made even more realistic and original by the addition of a butterfly hovering or delicately poised on the petals or foliage. Several kinds of butterflies are suitable for inclusion in our pictures. The large or common white is one of the simplest, which should be attempted before commencing more ambitious species, such as the Swallow Tail, Tortoise-shell and Peacock, as shown in the illustration. Here we should study the type of flower to which the respective butterflies are attracted.

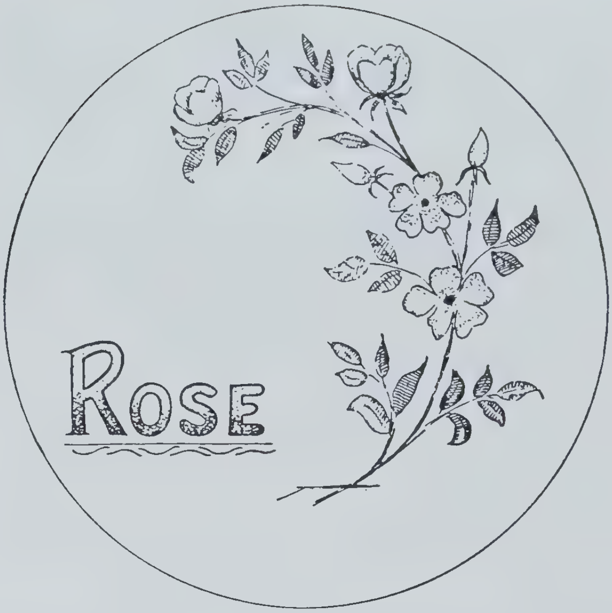


Fig. 22.16 *Plaque arrangement with Rose.*

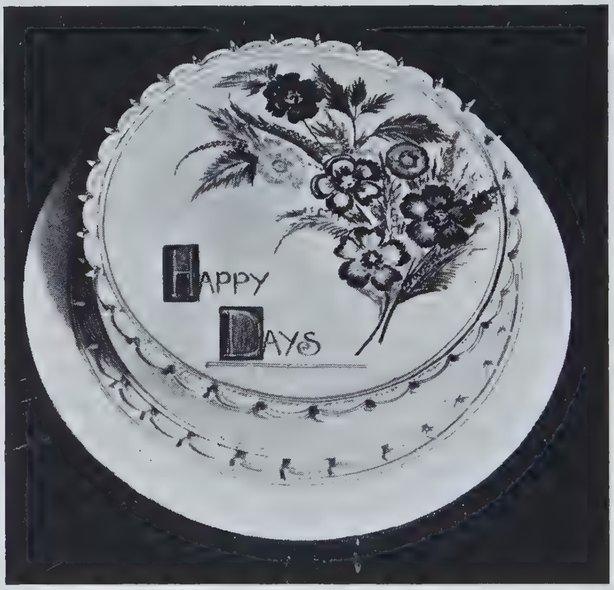


Fig. 22.18 *Floral Cake top painted.*

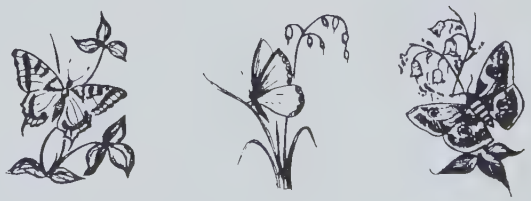


Fig. 22.19 *Butterflies painted.*

By now a considerable knowledge of flowers and sprays should have been obtained. The cake illustrated gives some idea of how a selection of different flowers are combined into a spray. With all these floral studies, colours of a lighter tone are employed, thus creating a cool or spring-like effect.

While the subject of spring is uppermost in our thoughts we might turn our attention to fruit blossom. Imagine the beauty of a tree in full bloom and then focus the eye on one particular branch. What an interesting study we have here! Whether the selected blossom be apple, almond, cherry, or even laburnum, it can inspire an unlimited number of designs. Whatever our subject it is well to remember that in portraying branches of trees the foliage and growth must appear smooth and flowing, and at no time must it look stiff and harsh. Here again, I advocate the study of nature to the fullest.

Foliage and trees

The observer must be prepared to note at all times the peculiarities which characterize the growth of trees, foliage etc.

A tree stripped of its leaves, although of less interest to the student, certainly provides us with a better idea of its strength and proportions and helps us to become fully acquainted with the disposition of its branches. In this respect trees differ individually just as they do in their foliage, and we should be capable of distinguishing a particular tree in winter just as easily as in summer. For instance, compare the branches of the oak with those of the poplar or willow. The disposition of the oak is to send out its branches at right angles to the main trunk from which they spring (Fig. 22.20), while the poplar tends to collect its branches closer together and lift them upwards, parallel with the main trunk. The willow, we know, is easily recognized by its 'weeping' or drooping foliage.

It is essential that a study of the framework of trees be made before the addition of any leaves is attempted. Illustrated are a variety of different types of foliage which need a certain amount of practice before one proceeds to paint a complete structure. Each example is executed not by continued flowing brushwork but by broken touches.

Here, light and shade begin to play an important part in our studies. To a certain extent this is produced by the broken touches. Briefly, as more light is seen through the foliage so the brushwork should be lighter and the under parts of the foliage darkened to show the casting of shadows. These principles only apply in full light, while on dull days or in the evening the outline of the tree predominates and should be darkened on the uppermost sides to emphasize its shape. It follows that a tree in full light must be lighter in colour than one in subdued light. The more the reflected light diminishes, the darker the colour of the foliage becomes.

Three colours should be sufficient to commence this work. First apply a pale green as a base, together with a touch of lemon yellow nearest the light to give the appearance of being farthest from the eyes. Whatever appears nearest the eye, holds most emphasis and this is done by darkening a colour with a little chocolate or an admixture of darker colour.

Other tints are added when seasonal representations are to be made; for instance, in autumn yellows and reds come into profusion. All the seasonal aspects of foliage show how widely a particular subject should be studied before any attempt is made at portrayal.

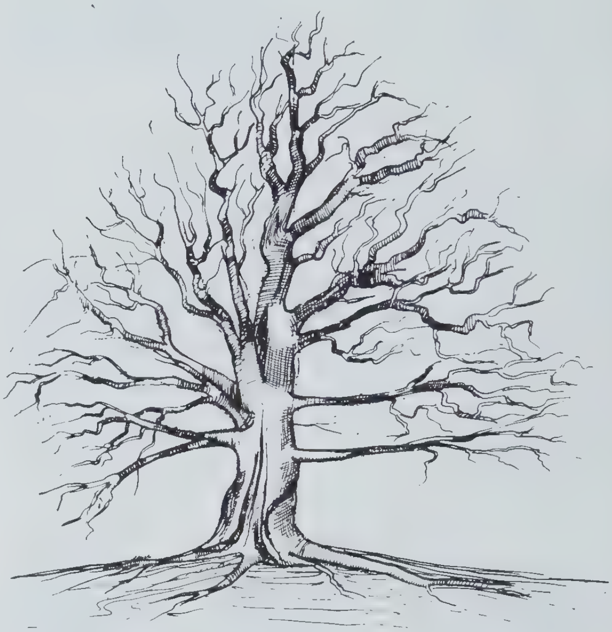


Fig. 22.20 *Tree.*

Building up a scene

Sufficient knowledge of natural growth is now at our command and we can turn our attention again to confectionery. Our main object is, as previously stated, to beautify a cake, and what could be more fitting than a simple scene? Birthday cakes give unlimited scope in this direction; the country cottage, an old-world garden, or old-fashioned lady are ideal for this purpose.

The following example should prove valuable in the production of a simple scene. Step by step these illustra-

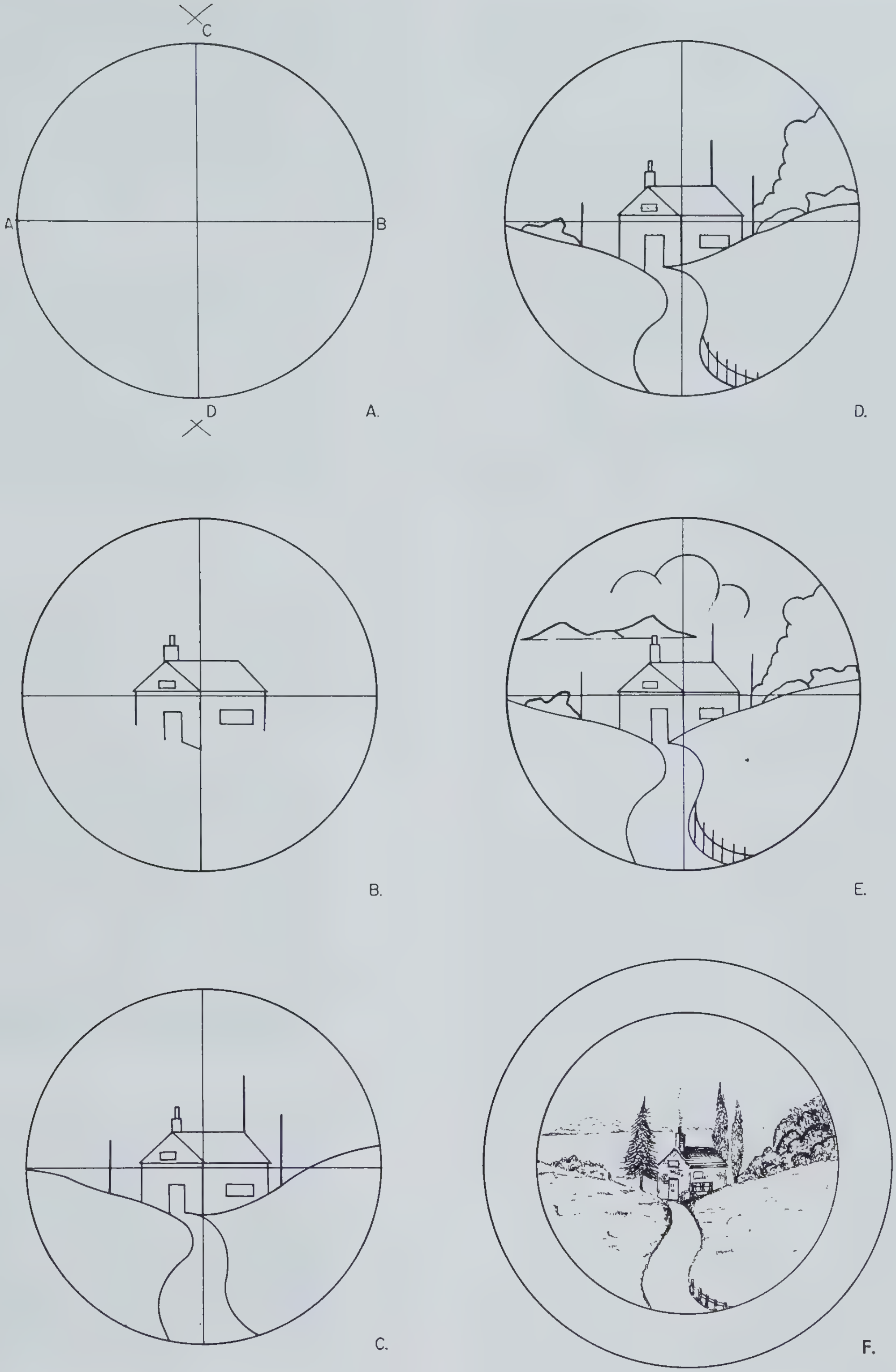


Fig. 22.21 *How to commence a scene with a cottage.*

tions are primarily intended to be practised and can be executed on good drawing paper. When perfected it will be possible to paint direct on to a cake, thus eliminating the lines for guidance.

First draw a circle, the size depending upon the circumference of the cake. Let us, for example, say our cake top is of standard dimensions, usually 8 ins. in diameter, then a 6 in. circle would be sufficiently large for the scene and would leave a border of 1 in. for any piping. For practice purposes a 6 in. circle is bisected into four equal divisions by means of a compass. Draw a line AB across the circle through the centre. Place the point of the compass on A and B and draw an arc, CD. A line connecting CD gives us four equal portions. The centre of the circle must be the focal point of the picture.

The position of the cottage is now ascertained. Notice how the roof is sketched above the radius of the circle and the lower part or walls fall beneath this line. This shows the lay-out of the landscape and pathway leading to the cottage, while the other gives us the arrangement of the trees and shrubs in a manner which balances the scene. Lastly, the background is sketched as in Fig. 22.21E.

We have now outlined a country scene: with a fine brush and chocolate colour on a suggested base colour of pale cream. The scene, when finished, will be of late spring or early summer.

SHADOWS

First colour the cottage lightly with lemon yellow and, for contrast, a red tiled roof in french pink. Trees, foliage and shrubs are next painted in pale green. It will be seen that the picture is now taking shape and at once it is realized how important light and shade become. We must decide from which side the light comes. If from the left, then the shadows are painted on the right of the trees, etc., while if the light comes from the right-hand side, then the opposite is the case. However, for our purposes the light is shed from the left and the shadows will fall on the right. Each of the trees is now darkened with chocolate colour on the right-hand side, and the same with the shrubs and hedging on the right of the scene.

BACKGROUND AND FOREGROUND

The hills in the background are darkened from the base with an admixture of chocolate and green colour, and should be faintly shaded towards the summit to give distance at the farthest point from the eye. Trees in the background are treated in a similar manner. The sky is then painted with a little blue and washed underneath with a touch of pale yellow. This gives height and depth.

Lastly we turn our attention to the foreground. All we have here are the two lines which form the pathway, and noticing the incline of the landscape it is obvious that the darkest colour falls along the edge of the path. This is painted with dark green and gradually the colour fades away to the outer edge of the circle, giving an impression of the land rising. Clusters of border flowers are painted in yellow, red, and mauve along the pathways and the fences are in chocolate colour.

Fig. 22.21F shows the complete picture as it would appear on a cake.

Skies and sunsets

It is not easy to lay down any rules to guide us in the creation of a picture through all the varying stages of its composition, or to enable us to specify its colour, tones, and atmosphere. Throughout the course of our studies we have seen at intermittent stages how the portrayal of the subject is fulfilled under light of varying intensity. How intense the light becomes is dependent upon the degree of brilliancy of the colouring matter in the sky.

More often than not the student is first attracted by a sky with a fair degree of brilliance, due to the fact that the colours are more decided and appreciation of them is simplified to a certain extent; thus tending to encourage our efforts and inspire more confidence.

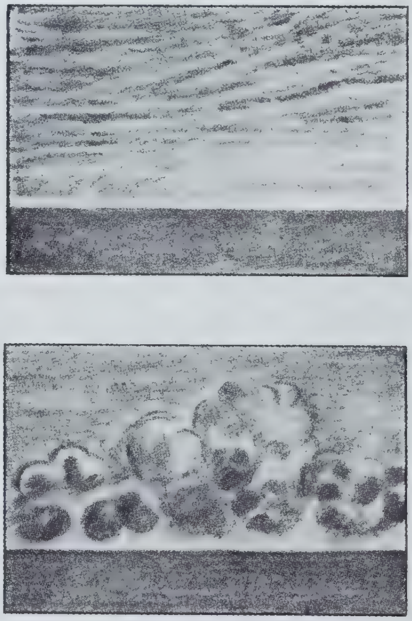


Fig. 22.22 *Skies.*

Evening skies and sunsets give us many picturesque settings and are also a source of inspiration with their brilliant yellows and reds, but cloud formations, while perhaps attracting us less, require greater skill. Blue and white are usually predominant in a cloudy sky, and as the clouds become heavier, the blues are intermingled with greys. Heavy or dark skies appear nearer to us, while skies with more brilliant colours will be seen at a greater distance.

I am going to try to give some idea of the process of painting this subject in colour; but it must be realized how difficult it is to describe the true gradations and strengths of tints. However minute and detailed an explanation, there will still be much that must be left to your own judgement. Several attempts at a picture will probably be necessary to begin with, and in many respects your first efforts may appear over-accentuated; that is to say, through inexperience the tints will be too powerful or some may be too warm or too cold.

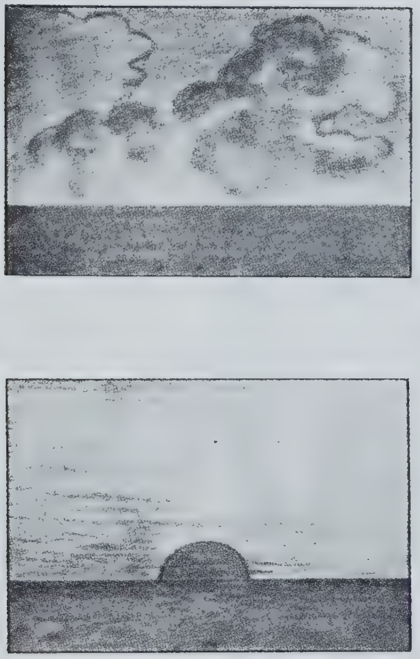


Fig. 22.23 *Sky and sunset.*

At this stage there should be no cause for discouragement even if mistakes are made, so long as you are prepared to recognize them as such; but a certain amount of satisfaction will accompany such failures and when these are understood they will gradually become less frequent. It is those who cannot perceive their faults who are unable to progress.

In attempting to portray a sky I suggest commencing with a standard blue colour and to begin with a light shade so that darker tones may be added; as we progress it is possible that the blue first applied may appear too strong or bright, in which case we can diminish the tint by damping the brush in clean water and lightly brushing over the colour in a horizontal manner. The brush is then dried and the surplus water removed. A small piece of blotting paper would also serve our purpose. This is only a corrective measure and is not recommended, as too much water or rubbing will destroy the surface. Nevertheless, it is a point worth noting.

After some repetition of these early experiments you will discover that the tints you mix are recognized without difficulty in nature, after which you will be able to paint with greater confidence and apply them to several parts of the picture in their correct strengths; until, eventually, it is possible to blend different colours of varying tones while still wet by a systematic application of one colour over another, provided the underpainting is dry.

A single experiment to gain experience can be made by dividing a rectangle into three divisions, each dividing line representing the horizon and the farthest point from the eye. Start at the top of the rectangle and apply a moderate tint of blue of sufficient strength to permit a gradual toning down to the horizon. The colour must be brushed in a horizontal manner and not too slowly otherwise one portion will dry before the other is completed. The first aim is to produce a clear surface of diminishing tone and, when this is achieved, the formation of light clouds is shown by lightly brushing the colour away, while still wet, with a clean brush.

The ripple in a blue sky is obtained by dragging the brush loosely over the colour, having regard to the formation of the clouds in that part of the sky. Light touches of pale yellow around the edges of the cloud give the effect of the sun behind or partially obscured, while the heavier clouds, which appear to be nearer, are formed by the incorporation of greys with the blues. Sunsets are produced from mixtures of yellow, red, and blue, toned down in a similar manner.

It is worth while noting the colouring of the sun in the sky at this juncture. Generally, when the sun is at its highest point the colour is seen at its brightest and most intense. The colour nearest the horizon is usually blue, which gradually gives way to yellows which, as they become brighter, introduce tinges of red, until the brightest red appears in and around the sun.

It is not always possible to see these gradations of colour in the sky at different times and seasons, but one of the best, if not the very best, example of gradation in colour, or one colour being emphasized at the expense of another, can be seen in a rainbow.

As the sun drops towards the horizon we find the colours in the sunset reversed. The brightest reds are around the sun on the horizon, which gradually give way to yellows, and finally the blue-greys of the evening are seen at the highest point in the sky.

When these preliminary exercises have helped us to become proficient, then the degree of brilliancy can be transferred to any particular portion of the pictures we intend to portray. Four illustrations of skies are given for study and it must be pointed out that no relative importance is attached to the foreground. The line across each picture is intended to serve as the horizontal line of sight.

As we progress in our study, nature constantly makes fresh demands upon our skill, but the experience of combining colours and producing the right tone or tints helps us to evolve something fresh when otherwise we should be mere copyists. Thus our imagination is enlightened and we have yet another quality of very great importance at our disposal.

To paint water

The treatment of water must next be considered. With its ever-changing moods and varying shades of blues and greens, water can provide some very picturesque settings. The rolling waves of the sea, with its foam lashing over the rocks or constantly creeping up on the seashore; the continuous smooth-flowing current of the river; the ripple of the lake or even the babbling brook; the quietness of the stream or stillness of the pond – these are only some of the many different backgrounds for a picture with water in it.

First, let us study the sea. At some time or other we do have occasion to represent scenes of this nature. More often than not it is the most suitable welcome for a friend returning from abroad, and some idea can be given as to the type of ship upon which he travels. It could be a liner or a ship of Her Majesty's Navy. Probably the ship would cause no undue concern, but it is the arrangement of the waves, of the sea and the sky which gives that realistic look. However, this must be portrayed largely from memory, particularly as a seascape is constantly changing and can never be seen again in the same aspect; but it will be found while watching that the largest waves are nearest to us, and that as we look towards the horizon the waves become smaller, until all that is visible is a smooth expanse of water.

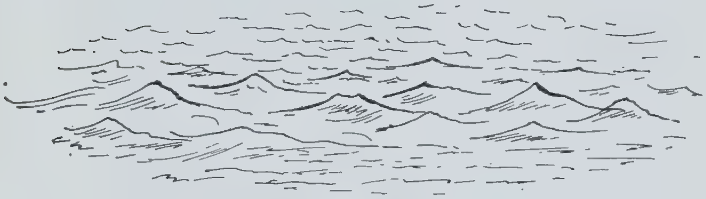


Fig. 22.24 *Water.*

If we take as our subject a ship at sea, then we must emphasize the importance of the ship and consequently only view the water that immediately surrounds it. In this position the waves become more uniform in size, the only contrast being with the white foam caused by the passage of the ship.

Fig. 22.24 shows how the waves are first sketched or painted. The larger waves are given more emphasis by pressure on the brush and as the sea becomes smoother, so the depth of each stroke diminishes. The larger waves reflect the light at the uppermost point and we must, therefore, brush the full colour of blue at the base of each wave, and gradually shade away as the colour fades until the white or foam is shown at the top. Greens of varying intensity are brushed into the blue of the base, the quantity being dependent upon the light reflected. A greater depth of colour is shown as the light is reduced.

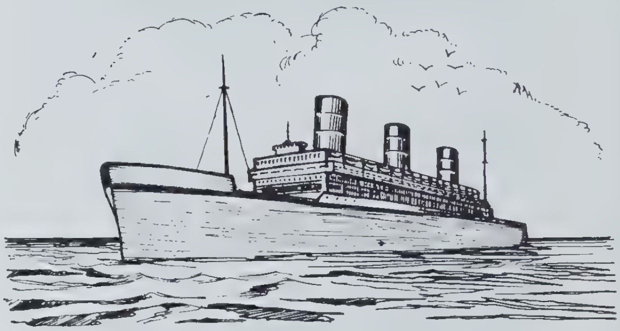


Fig. 22.25 *Ship on sea.*

If a shadow or cloud is seen above, then the colour is intensified, and consequently this gives depth to the water. Again, as the colour under such conditions becomes more intense, the white foam of the sea gains predominance.

In general, white can be painted on top of a colour such as blue or green and in this way we more readily produce the desired shades, but for our trade purposes, as already stated, anything to be portrayed in white can only be done by leaving the white base, and our only means of obtaining the desired effects are by shading gradually, reducing a colour to nothing.

Similarly, a stream or brook is dependent upon the light, but one factor comes to mind: the water is of a more shallow nature and in summer is often found to be still and clear. Here only the palest shades of blue and green are applied, while in some instances the bed of the stream gives a more sombre hue, especially if the water has been disturbed, and touches of browns are then introduced. Also, various points along the stream are darkened by overhanging trees or shrubs and these parts should be painted proportionately darker.

Water, therefore, does not only receive reflections of light but is capable of receiving shadows also. If the water is seen perfectly clear no shadows occur but the reflection becomes more pronounced.

The illustration of the ship will stress the many important points which have previously been explained. The point from which the picture is seen would be at the left-hand side. From this aspect we have a good example of parallel perspective. If all the lines were continued they would terminate on the horizon at a point on the same level as the eye is focused. Notice, too, how the lights and shades are introduced to give the rounded effect of the funnels and hull. The structure of the hull is just visible through the varying shadows. The greatest light is reflected on the funnels, down the centre, and is produced by gradually shading from the outer edge because this point is nearest to the eye.

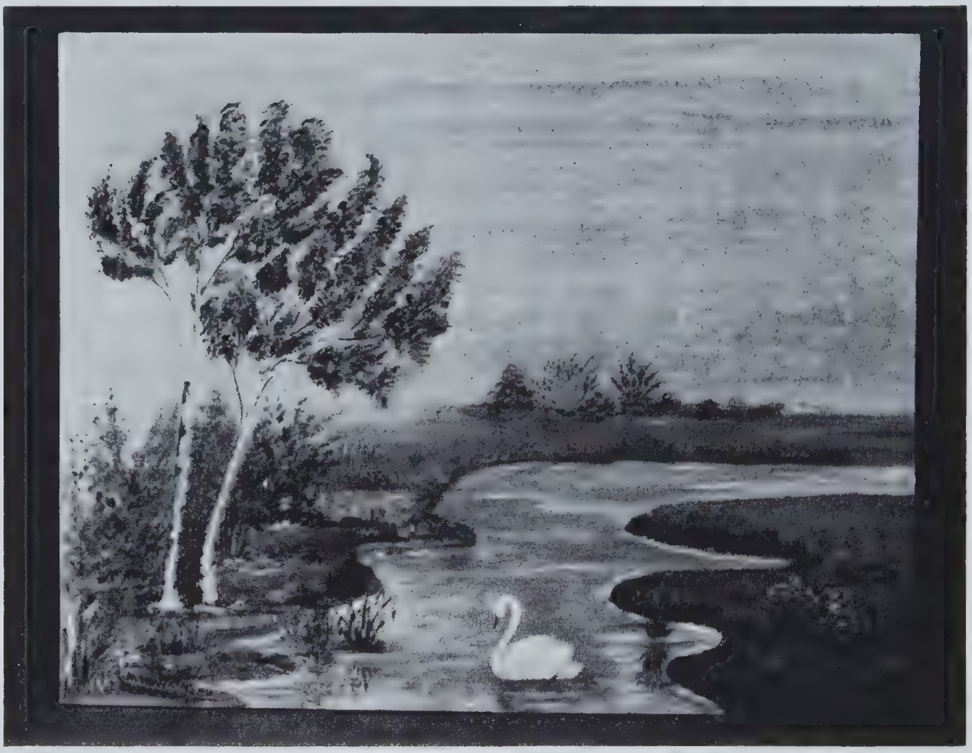


Fig. 22.26 *Riverscape with Swan.*

The waves of the sea nearest to us appear greater and gradually diminish towards the horizon. The colours used are blue of various shades and red for the funnels, while a proportion of green and yellow is incorporated in the colour of the sea. A white background is essential for this type of picture.

Having given a brief outline of the ocean, let us note the differences in a stream or brook.

First, the natural setting through which the stream wends its way: the country surroundings, the woodland, the song of the birds, a sense of quietness, the stillness of a summer's day, or even a gentle breeze, are all features which have a particular bearing on the picture. We must try to cultivate this atmosphere or sense of realism as well as the subject selected.

Here it will be noticed that there is little or no movement in the water itself and, more often than not, a stream of this description is found in a secluded environment and the light available at the precise time we paint must determine the colours or shades.

At this stage I do not intend to give any importance to the surroundings but only to the water itself. Suppose the stream is in a fairly open position and the light is fairly bright, then the first and darkest colour falls along the under edge of the bank. Colour must be of the right shade before use, and should be applied in horizontal lines, varying distances apart, each being shaded to give the reflection of light and clearness. Should the light fall at one particular point, then the surrounding colours will be gradually intensified to become very clear, so clear that the bed of the stream is visible. Large stones often lie on the bottom and quite a fair proportion show through the water. The flow of the water tends to quicken as it touches or passes over the stones. Trunks or branches of trees are also found to obstruct its course. These may be mere details but require careful study.

We have observed and noted some of the many characteristics of water under varying conditions and the likely position of objects in the close vicinity. In pursuance of our study, especially in subjects such as water, we are apt to become implicated with other subjects which although distinct, are nevertheless of relative value one to another.

Looking into the water becomes quite fascinating as we observe the movement of the current, or stillness of the surface with the reflections of the scenery around thrown upon it.

REFLECTIONS AND SHADOWS

Reflections form the main theme of our present study and we shall now try to analyse and present them in a simplified manner so that the interest is not in any way destroyed.

Water always reflects the objects upon the water's edge, but the clearness of the reflection is dependent upon the existing light. The lighter clouds and the colourful skies are also reflected, while, if the water is clear, no shadows occur but the reflections appear more vivid and, to some extent, a proportion of colour impregnates the water. Because a particular object is visible it does not necessarily follow that its reflection is seen also; while on the other hand it is not uncommon to see the reflection of an object when the eye cannot see the object itself – something intervenes between the eye and the reflection. Generally, the reflections of all objects are perpendicularly beneath the objects themselves.

For the purpose of illustration let us view the two posts standing in water, or which could be situated at the edge of the bank, by the riverside, or at some distance from the water's edge. Whichever our choice, probably the last mentioned would serve our purpose best.

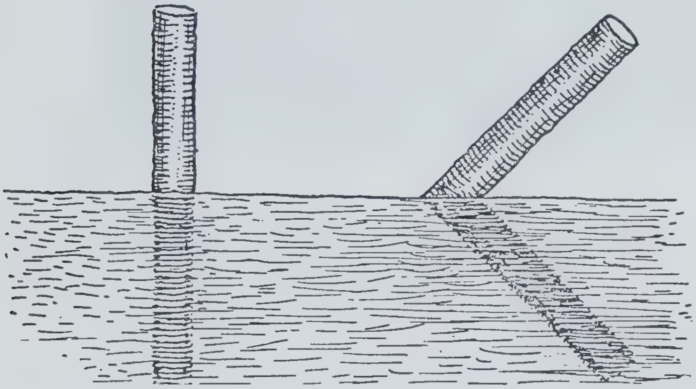


Fig. 22.27 *Two posts in water.*

A sketch of two posts is shown in Fig. 22.27, one in a perpendicular position and the second at an angle. The perpendicular position indicates that the portion shown above the water neither advances to nor recedes from the eye, but is exactly over the position of the lower part; note that the reflection will be the same in length.

With the second post, in an angular position, we find that reflection is again the same in length; also the angles above and below the water-line correspond. Only when the perspective of distance is taken into account does the reflection differ slightly.

For the time being let us study the perpendicular post only and endeavour to show how the reflection's position is ascertained geometrically. Draw the dimension of the post on a line AB, this representing the water-line. Next, fix the line of sight, CD, and along this line let E be the focal point. Draw a line perpendicular and parallel with the post from the point E to meet the water-line at F. If a line be drawn from the top of the post G to E, and also from H, being the point at which the post connects with the water, to E, then we have the true perspective above water (Fig. 22.28).

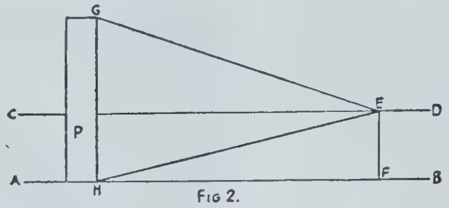


Fig. 22.28 *Reflections. Line of sight.*

In order to show the reflection, the line EF is continued below the line AB to the point L, so that LF is the same length below as EF is above. Next join the points G and L, and where this line cuts AB, at S, it will give the point through which a line should pass from E to meet the perpendicular line or continuation of GH; thus the depth of the reflection will be found to equal the length of the post above water (Fig. 22.29).

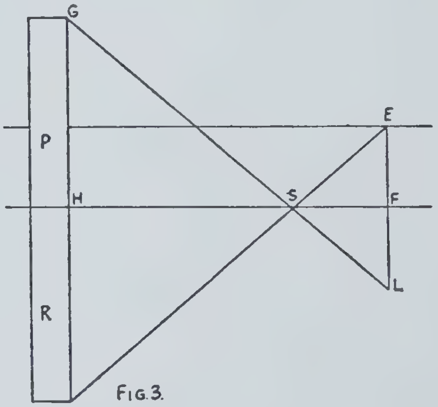


Fig. 22.29 *How to calculate depth of reflection.*

The same principle is applied when an angular position is required. In Fig. 22.30 a perpendicular line is drawn from the top corner of the post passing through the line

AB. The line of sight and focal point must again be fixed. Continue E below the water to the same length as before and join the points G and F, and where this line cuts AB, at S, a line is similarly drawn from E to H. In this instance, the top of the post is also at an angle and the true perspective is ascertained by joining GE and HF.

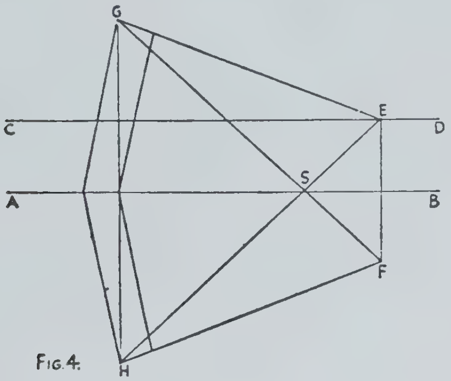


Fig. 22.30 *Angular reflections.*

Fig. 22.31 gives yet another more acute angle to which the same procedure applies. Thus it is possible to portray the reflection of any perpendicular or angle subject by this method.

We illustrated previously the simple structure of a house and its surroundings in perspective. Now imagine this house at the edge of some water and suppose we wish to show its reflection.

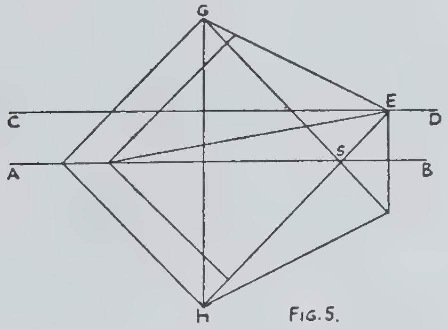


Fig. 22.31 *More acute angular.*

In Fig. 22.32 the line AB denotes the edge of the water, and supposing it is parallel to the picture's plane, then the reflection falls directly beneath it. The outline, it will be noticed, is not so distinct as the picture itself, but observe how all the perpendicular lines are, shall we say, continuous, or, if they were joined together, the result would be one single line and all these perpendiculars would become parallel to themselves.

Another point of interest: the house is not situated directly upon the edge of the water, therefore the respective margin of land is shown in the water before the actual reflection is commenced. This, of course, must have its limitations. As the ground between the water-line and the house increases, it is obvious that the portion reflected decreases.

To understand this fully, one can devise a simple method, by the use of a small rectangular mirror. Place the picture in a vertical position and lay the mirror face upwards along the line AB in such a way that we look into the mirror rather than at the picture. The position of the reflection will be seen at once and will bear out the various points that have been stressed.

Let us now carry out a further examination. It will be seen that the narrow margin of ground in front of the house is visible beside the reflection. Hold the mirror along AB as before, and take care that a horizontal position is maintained, then gradually move the mirror away from the picture and take note of the portion of the picture reflected at varying distances until no part of the picture is reflected at all. The house is situated almost parallel to the picture plane, but if the house were in an angular position to the picture plane itself, some idea of the reflection could be arrived at by holding the mirror along the lines AB and keeping one corner on the line and gently moving the other end away from the picture. In this way we are able to note how the reflection would appear at various distances. This may be repeated by holding the opposite corner on AB.

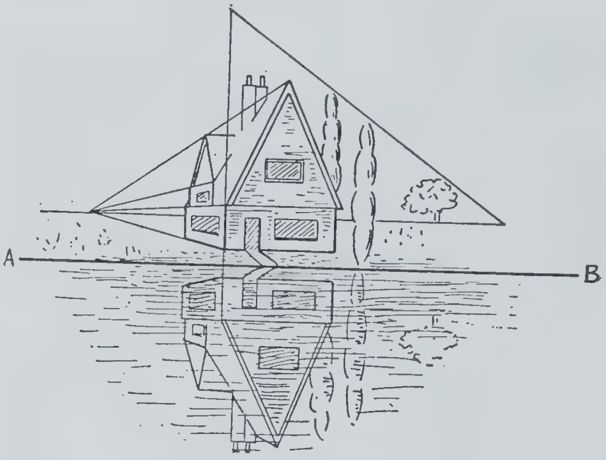


Fig. 22.32 *House reflected in water.*

Many entirely different reflections can be dealt with in this way but, generally speaking, emphasis on the foreground predominates.

Whenever pictures with water are painted, a cool yet refreshing atmosphere prevails and this can only be portrayed by the use of cool colours – blues, greens, yellows, etc. Similarly the tones of the reflections are lighter and the outline is less pronounced; yet if the light becomes less intense, then the reflections are darker and more prominent. The clearer the water the more the details of a subject are seen in the reflection. All these points must be studied and as far as possible firmly impressed upon the memory.

Harmony

The instructions given throughout these pages have, in great measure, been based upon miscellaneous subjects which, although belonging to their own particular spheres, do need a vast amount of study before they can become harmoniously combined. It is now time for us to study the harmonies and contrasts of a picture as a whole.

Colours and forms become more generalized and blended together as they recede, or, in other words, they are more subdued by, and intermingled with, grey tones, so that they lose their distinctness in mass formations. While objects in the foreground are well defined there must still be one harmonious union of the whole. No one part must appear prominent at the expense of another, and the masses of light and shade must be managed so that the recognized features in the landscape present themselves with sufficient force to give individuality to the scene.

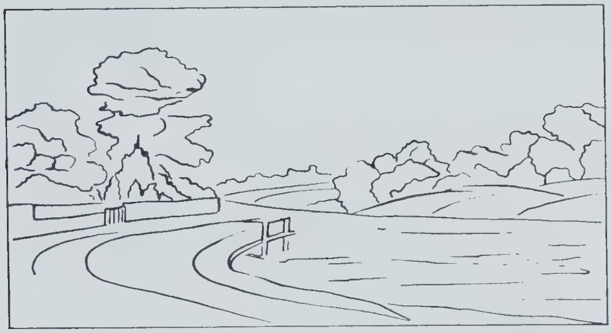


Fig. 22.33 *Outline of picture.*

Moreover, we are able to make the same observations respecting the middle distances, except that the details should be less well defined. If these characteristic distinctions are observed with regard to the amount of work each demands, we shall in due course attain our object in giving expression of form, and combining colour, harmony, and tone.

Fig. 22.33 shows the outline clearly defined in such a manner that we are able to judge for ourselves how the various distances and depths of colour are achieved in Fig. 22.34. Thus we have made a thorough investigation of colours. Let us come back to our original subject, the application of colour to cake decoration. We have now numerous resources at our disposal which should facilitate our needs in the future, and we must be prepared to simplify or commercialize our ideas, that is, to produce the most effective results with the minimum amount of brushwork.

Coloured borders

Apart from the iced cake itself, certain types of soft run-out sugar borders also lend themselves to colouring and greatly enhance the finished effect of a cake. A colour must, of course, tone with the general colour scheme and will, in many instances, obviate any non-essential piping.

These borders, although really complete in themselves, become more attractive if a touch of colour is brushed on to any protruding point, or a circular run-out may be broken by the addition of colour at equal distances around its circumference, which may prove to be very effective. Fig. 22.35 gives some idea of the simple arrangement of three colours. On a pale lemon

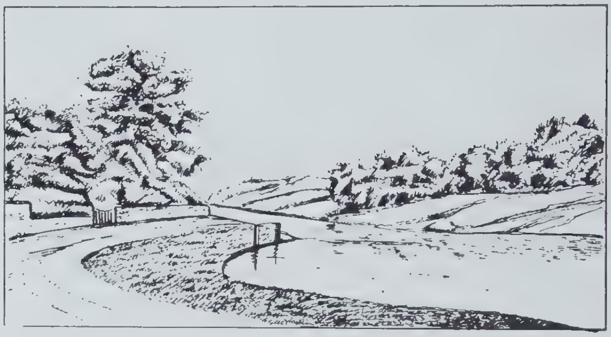


Fig. 22.34 *Middle colour and distance.*

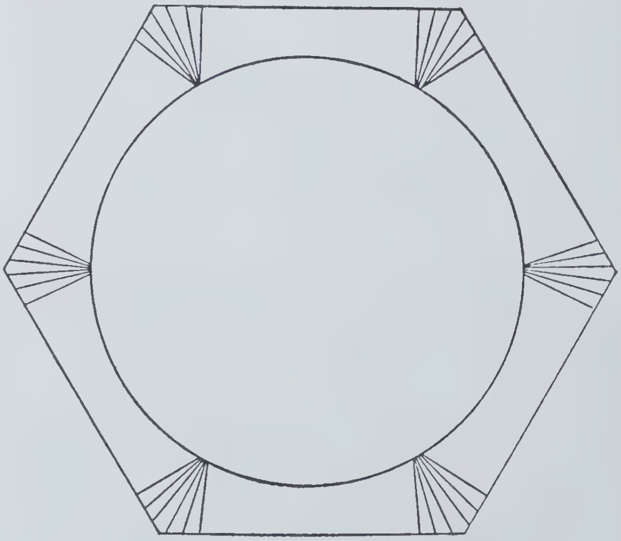


Fig. 22.35 *Border sixes.*

border the composition would be blue, yellow, and green; but blue being the darkest or strongest would fall in the middle section so that the colours, yellow and green, being the palest would give a shaded effect. If a white border were used then we could employ two darker shades, such as blue and red (carmine), providing the section between these two were left to show the white base.

On a pink border three graduated tones of french pink could be used, each colour being toned down by the addition of water to give the required tint. Many other schemes will result if experiments are made. Fig. 22.36 shows the complete top of a cake. The main theme is based on a typical garden scene, with its crazy paving, which is incorporated in the run-out borders. The base colour is in pale cream and the three main colours used are mauve, yellow, and green. The border is first outlined very finely with chocolate colour, and when it is dry, pale shades of mauve, yellow, and green are brushed in alternately, taking great care to keep within the outline, otherwise the colours will run together and the general effect will be spoiled.

This work should be very light in tone because it is only intended to harmonize with the general design, and therefore should not distract attention from the main decoration. The old-fashioned lady is done in similar colours, the pleated crinoline being formed by eight strokes of the brush, the space between each giving the required shading.

A similar border may be executed for the base of the cake or, if so desired, masses of coloured flowers could be placed at intervals; that is, providing a run-out border is used for the base also. If this method be adopted then only one piped line will be necessary round the side of the cake at the base.

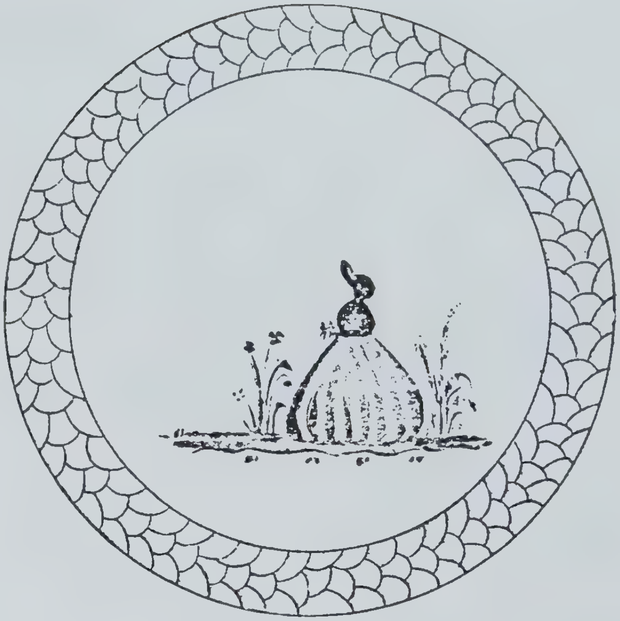


Fig. 22.36 *Border of crazy paving.*

A cake, sufficiently large, may be divided into either two or four sections or panels, with miniature scenes, such as that illustrated in Fig. 22.36. Alternatively a spray of blossom could be shown hanging from the underside of the top border.

23 Colour Craft for Birthday Cakes

So far in dealing with figures we have concentrated on birds and animals, but these may be of secondary importance to many other subjects although we cannot afford to omit the study of their possibilities. Let us now look at some piped figures that we associate with the more ambitious birthday cakes.

Children always come to mind when we think of a birthday and if we try to capture a little of their world of fantasy then fairy stories, fairies, elves, and nursery rhymes can all suggest subjects to adapt for special orders. In selecting an idea we must always consider the age group, but what is ideal for very small children may equally well be presented for the older child.

Nursery rhymes

One of the first nursery rhymes recited to a small child is usually *Jack and Jill*, which lends itself admirably to our purpose and, in the ensuing sketches, we shall endeavour to show how the different age groups can be represented.

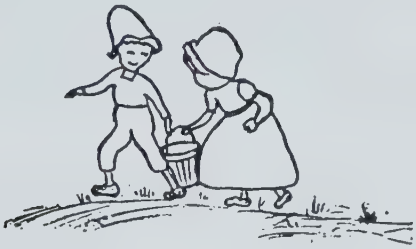


Fig. 23.1 *Jack and Jill.*

Two pictures are shown, and it will be seen that practically the whole of the rhyme has been incorporated. A quaint yet typical scene first shows Jack and Jill ascending the hill; but at this stage the slope of the ground is only required to be representative and simply gives a realistic background to the two figures. A blade of grass here and there is quite sufficient to make it look authentic.

The two figures are designed to represent younger children and, while still only an outline, they can be coloured, or if desired, piped and filled in with soft sugar. This would of course take longer to make, especially if naturalness is to be preserved.

In common with all figures of children, gaiety and colour prevail, and rather than blending the colours one must think in terms of something more contrasting and distinctive.

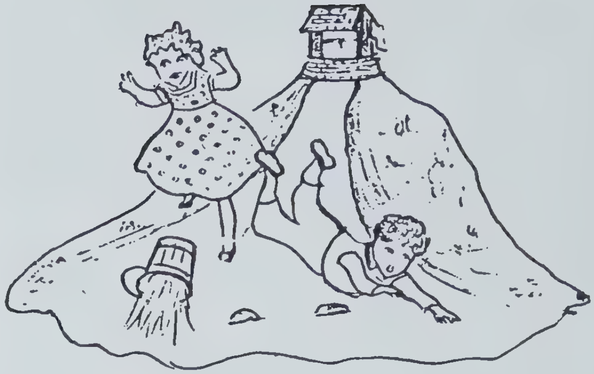


Fig. 23.2 *Jack and Jill.*

The primary colours, red, blue, and yellow, should be used unchanged. Some indication will be given if the following pattern is carried out. First the boy: the jersey or jacket is usually in red, the trousers in blue and the hat in brown, which could also be used for the shoes. Then, in contrast, the little girl's dress would be yellow with a blue coloured bonnet. There is no strict ruling, but it will be seen that in principle the figures look particularly youthful and gay if treated in this manner; so do not forget that it is this variety of colour that attracts the little ones.

FOR OLDER CHILDREN

The second illustration, perhaps a little more complicated, yet complete in its setting, is based on children of an older age group, and rather emphasizes the action of the rhyme. But first our attention is directed on the children. Here again colour, in relation to age, plays a very important part, and may be elaborated a little. One way would be to introduce the secondary colours, green and orange; then the pattern would be blue trousers and green jacket for the boy, but the girl's dress becomes a little more fancy. It would be red with white spots. This could be quite easily done in sugar by adding spots of white sugar immediately the red sugar has filled the outline. Orange could be used for the pail and chocolate brown for the varying shades of the hair and shoes.

Having first outlined the figure, we can develop the scene by showing the pathway up the hill and, if desired, the tiny well at the top. A little green grass at either side of the path, with a semblance of flowers dotted here and there, forms a delightful and compact scene. Imagine how well this could be made to fit a complete cake top.

Little Miss Muffet provides us with suitable material for our second nursery theme. We could first show Miss Muffet on a tuffet and then being frightened away. This rhyme could be treated in the same manner as the previous one, but just see how the running away is sufficient to illustrate the action in the rhyme.

The spider has not been included (but could be if necessary) for I always believe that edibility and decorative appeal should be of first importance in cake decorations. The little green mound, with grasses and miniature tufts set about a bowl of curds and whey on the ground, combine to create a dainty yet effective scene. Such figures can also be graphed as an aid, and for this reason I have shown Miss Muffet sketched in that way.

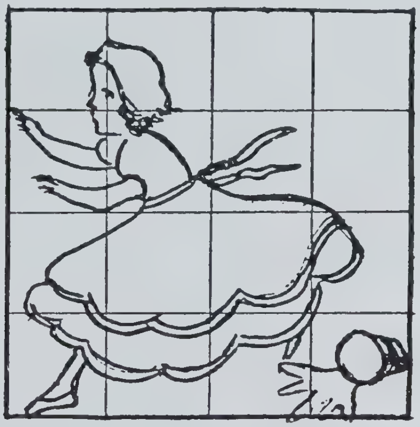


Fig. 23.3 *Little Miss Muffet.*

A 2 in. square sub-divided into ½ in. squares should prove satisfactory, but the diagram could quite easily be scaled to ¼ in. squares and thus help in giving a more accurate sketch. Once the drawing has been completed the green surround can be added.

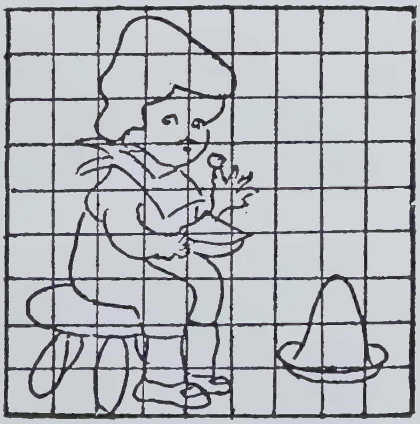


Fig. 23.4 *Little Jack Horner.*

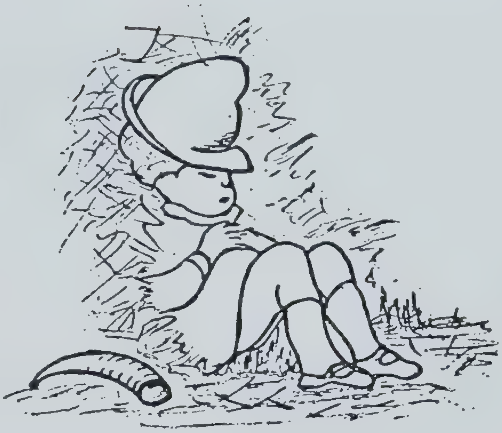


Fig. 23.5 *Little Boy Blue.*

Little Boy Blue, another of these little figures, can be drawn on similar lines. Notice how a certain quietude has crept into this scene and how the hay somewhat overshadows the figure of the little boy; a few lines in criss-cross fashion are enough to represent the hay, particularly if the background is coloured in pale yellow and slightly darker lines are then added. The ground could be a mixture of pale green and yellow and the horn outlined with chocolate colour.

Little Jack Horner is yet another compact yet typical subject suitable for reproduction. The sketch shows the entirety of this theme, and in comparison with our previous figure this is drawn by means of the graphs, composed of ¼ in. squares set within a 2¼ in. square. From such a graph it will be seen how the portions of the various details fall into place to help us.

Suggested colouring is blue trousers against a green stool, with a yellow jersey. This would create a charming little figure. If desired, a little background colour, preferably of a pale blue or green, might be used in contrast. However, this must be applied as evenly as possible in order to obtain a matt surface.

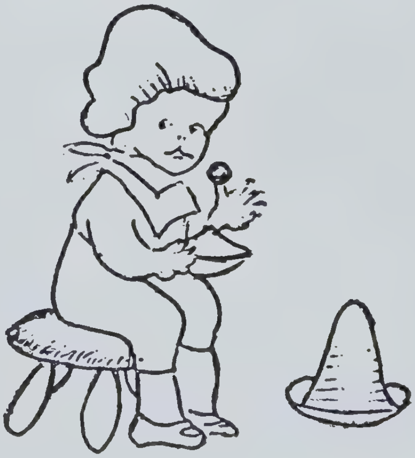
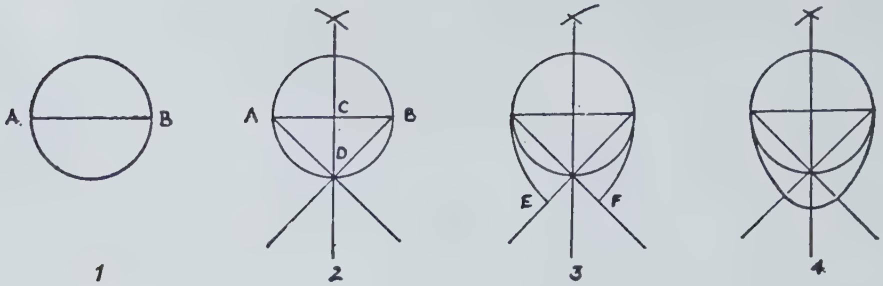


Fig. 23.6 *Little Jack Horner.*

Fig. 23.7 *How to draw Humpty Dumpty.*



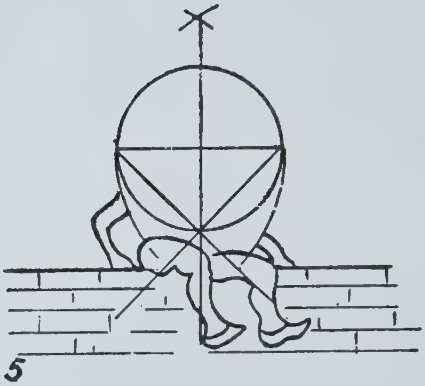
Humpty Dumpty. A study of this favourite character shows that the figure itself is more or less contained in an oval, and once again it would be to our advantage to consider the drawing first.

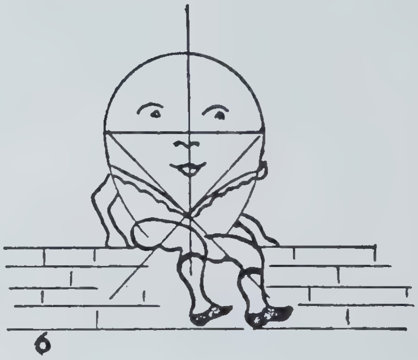
DRAWING IN AN OVAL

The method of drawing has been simplified as far as possible. First draw the line AB 1 in. in length, and from the centre describe a circle 1 in. in width with a $\frac{1}{2}$ in. radius, this being a suitable dimension. Always bear in mind that the ultimate figure is dependant upon the diameter of the initial circle and therefore corresponds with the width of the oval.

The centre line is now bisected and a line is drawn at right angles through centre point C and continued through D. The lines drawn through AD and BD are $1\frac{1}{2}$ ins. in length. From points A and B describe the arcs E and F, the diameter again being the same as AB. The oval is then completed by joining EF, using D as the centre point. Ovals of various sizes can be drawn by this method.

Number 5 gives the position of Humpty Dumpty's legs as he is seated on the wall, but notice that the points E and F in this diagram meet at the line of the wall. Finally, we see how to incorporate the facial features, and the head and body effect of the lower portions.





The same figure can be produced in either sugar or marzipan. Commence with the oval shape, which should be outlined and filled with flesh-coloured soft sugar and dried. The wall is now cut from brick-red coloured marzipan. The small semi-circle is now cut away to allow the head to fit into position. By doing so we follow the interpretation of the drawing, the join of which is covered by the positioning of the legs. The arms are then added and the features, etc., complete the figure.

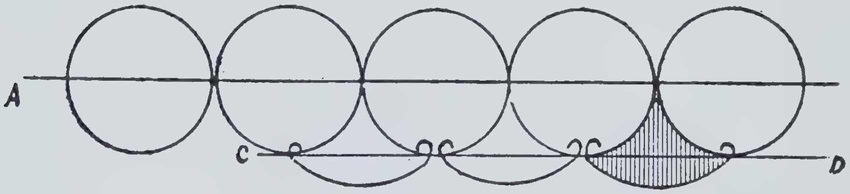
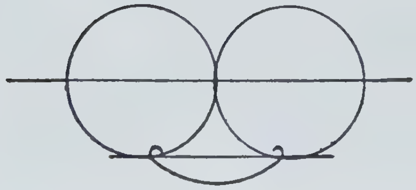


Fig. 23.8 *Aladdin's Lamp.*



The marzipan wall and sugar head should be of the same thickness to ensure that the legs are attached correctly, and the outer edge of the head may be lightly shaded with a little carmine to give a more realistic rounded appearance. This colouring must be very sparingly and delicately done to obtain the greatest effect.

Aladdin and the Lamp. For the next subject Aladdin and his magical lamp could be illustrated in many forms. To begin with, a fairly simple reproduction of the figure is shown in a representative setting, for this type of scene could be incorporated either on the top or side panel of the cake.

DRAWING WITH SQUARES

The illustration shows how the figures can be drawn by means of squares which merely serve to indicate the position of the various features. In this particular instance a square of 2 ins. is drawn and divided into ½ in. squares to assist in outlining the figure. Once the drawing has been done the piped outline can be followed with the same ease. The figure could now be filled with coloured soft sugars or white sugar and tinted when dry and finally fixed in position. In the first sketch of Aladdin, the lamp is shown as an outline and the next step is to produce it cleanly and correctly.

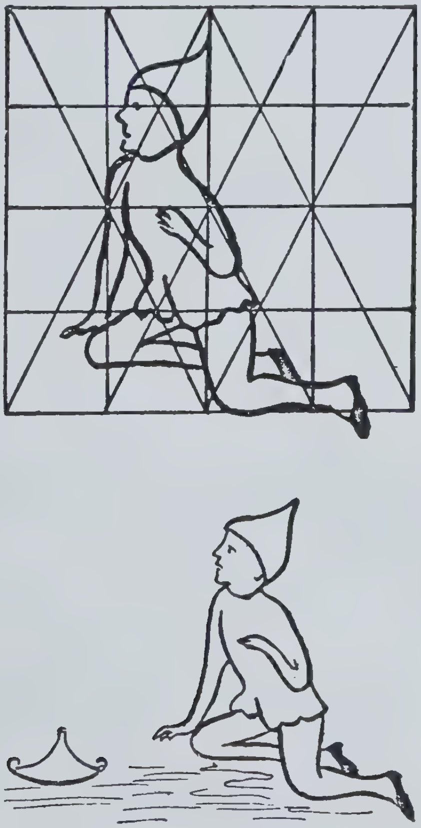


Fig. 23.9 *Graph and drawing of Aladdin.*

First draw the line AB and along this line describe a series of circles of 2/5 in. radius. The centre point of each circle is again 2/5 in. away from the previous circle. When completed, connect the circles with a base line CD. The compass point is now placed on the point where the two circles meet on AB and the arc is drawn. The C scroll is added to each end to complete the outline. Here again the size of the lamp can be adjusted by the size of the circles.

Having designed the lamp and studied the method, the idea of a border comes to mind. A border may be easily designed by means of a simple illustration such as this lamp, and it would be a most suitable framework in which to set the scene.

Fairy cottage

The next illustration shows a typical example of a fairyland cottage embodying all the characteristics previously described.

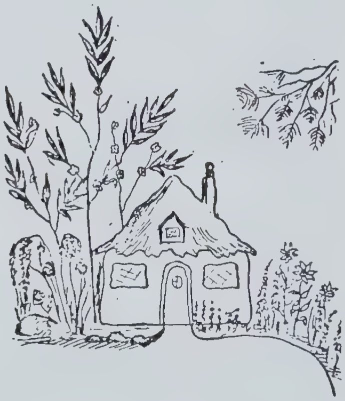


Fig. 23.10 *Piped cottage.*

How to arrive at such a cottage is now based on the drawing overleaf. As will be seen, this is a very ordinary sketch of a miniature house. The base dimension is 2 ins.; height to the apex of the roof is also 2 ins.; the line from which the windows are drawn is ½ in. from the base line. Notice too the position of the chimney contained in a ½ in. square with the point of the apex as one of the corners of the square. The attic window is in line with the front door. These details should be borne in mind, for they will be a great help in obtaining the right balance.

It will be seen that although our cottage is primarily based on the above drawing, certain modifications have been made to give a fairy-like charm. The surrounding foliage, although a natural background, is designed to focus greater emphasis on the cottage. At this point an alternative type could be included. The first cottage has been made from a basic drawing composed of straight lines, so now let us see what can be achieved with circles.

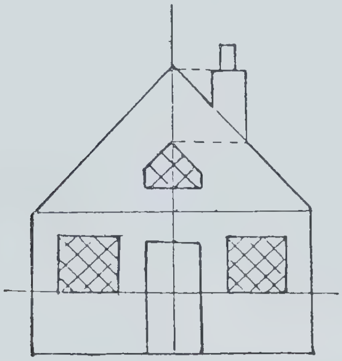


Fig. 23.11 *Drawing a cottage.*

Quite a different type in the shape of a toadstool can be designed from a circle. Commence as before with a base line 2 ins. in length, and from points A and B describe the arcs to determine centre point D. Now describe a circle that is $1\frac{1}{2}$ ins. in radius from point D, then join D and C. Measure E 1 in. on the centre line DC, an arc is then described with $1\frac{1}{4}$ ins. radius through points AF and BG. Next, draw in the vertical lines through AF and BG and continue to the outer circle, and from these points the smaller arcs H and K are described with the same radius.

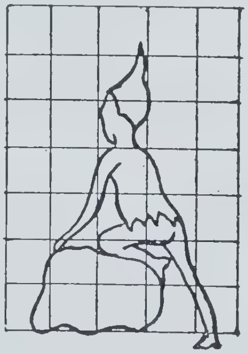


Fig. 23.12 *Elf graph.*

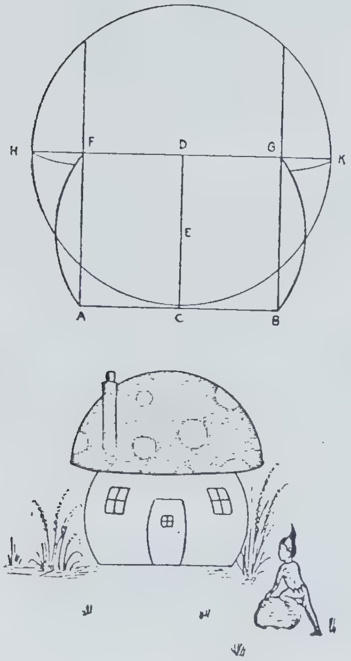


Fig. 23.13 *Toadstool house and elf.*

The completed shape is now illustrated, but notice how the windows and doors are designed in keeping with the curved shape of the base. The roof would be executed in two colours, most effective being red with white circles, although a combination of green and white gives a second choice; or, if desired, white or cream could be the base colour and the smaller circles could be red or green. Any combination of these colours would prove very effective.

The addition of a floral motif on either side, together with the little elf resting on a stone, makes quite a delightful and charming scene. A diagram by which the elf is sketched is composed in a rectangle $1\frac{1}{4} \times 1\frac{3}{4}$ ins., divided into $\frac{1}{4}$ in. squares. The true position can now be ascertained prior to completing this little scene.

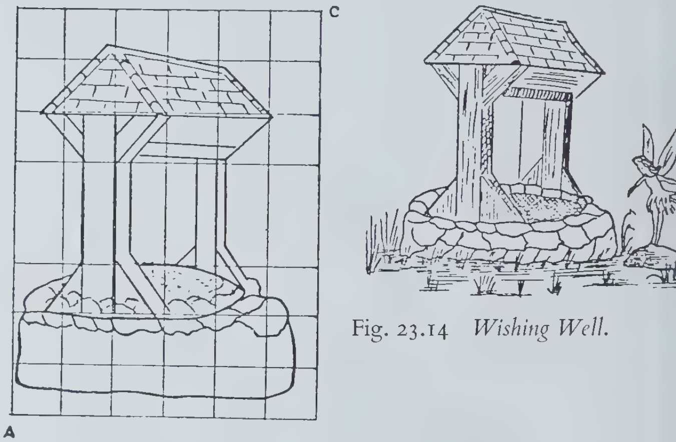


Fig. 23.14 *Wishing Well.*

Wishing well

Upon following this path beside the cottage we find the old wishing well. To give a better idea, this well has been somewhat enlarged, but before attempting to reproduce the picture it would be best to study the diagram.

The width is 3 ins. while the height is 4 ins. The rectangle is divided into $\frac{1}{2}$ in. squares with the exception of the centre inch. In each case the horizontal lines here show the position of the cross-beams, while the centre vertical line gives the position of the rope.

One point must be noted here, for as we look at the top of the well the lines recede to the point farthest away from our view, as in the case of parallel lines. Therefore, to obtain the right perspective, it is necessary to draw in these lines at the angle shown.

So far we have only dealt with the drawing, but such a sketch can be piped with run-out sugar and tinted in the various colours when dry, or the wall in this instance could be piped in various colours.

24 Borders for Birthday Cakes

The main thing to remember with borders for birthday cakes is that they fall into the classification of commercial. Simplicity should be the keynote, and quite often the greatest effect is produced from the simplest form.

The application of colour also influences the design, for contrasting colours can do more for the general over-all appearance than a gradation of lines and scallops. It is therefore better if we look at colours and their contrasts before proceeding with the piping.

Probably the first colour to come to mind would be pink, a common choice for coloured cakes, and providing the base colour is a pale shade, almost any colour will contrast with it. The depth of colour, however, must be in keeping with the base for it needs a good deal of care to experiment with extremes of colour, although an experienced person can use them to obtain still greater emphasis. But commence with an average colour; the overpiping can always be in a darker shade of the same colour, then as a contrast pale green would be an excellent secondary choice.

The illustration shows the wavy line overpiping the bulb border and inner line A, and the dots placed between the top side of each bulb, plus the second line in green, which commercially should be sufficient. With a little more time, however, a dotted border in very faint chocolate raises the standard considerably.

This form of decoration may be extended to various base colours, and the following should serve as a general guide.

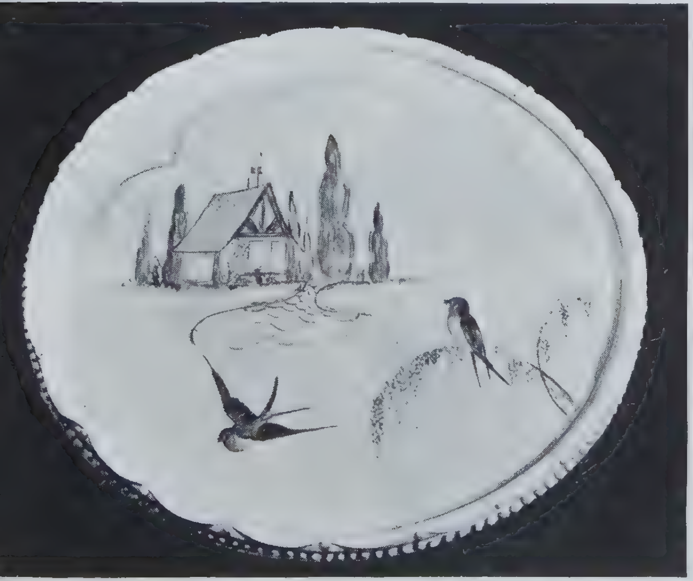


Fig. 24.1 *Colour application as described.*

Colour schemes

Base Colour	Overpiping	Secondary Colours
Pale pink	darker shade	green or pale blue and yellow
Salmon pink	darker shade	green and mauve
Lemon yellow	pale green	mauve, pink, or blue
Pale cream	orange	green, mauve, or chocolate
Biscuit or coffee	chocolate	green
Chocolate	pink	green

The above colour schemes are all based on at least three colours and on the border described, but this is only intended as a basis and is easily extended to all types of borders for those who wish to experiment. These same principles have the advantage of being applicable to any type of sugar covering.

STAR TUBES AND BORDER CONSTRUCTION

The star tube has a special use in birthday cakes, particularly if the cake is made rather shallow. A slightly coarser cut tube is the better, for the markings are more clearly defined and the sugar is piped in a continuous zig-zag fashion around the edge of the border. The main point is to create the same evenness all round, then the same border may be repeated around the base. Next pipe a line or scallop inside the border

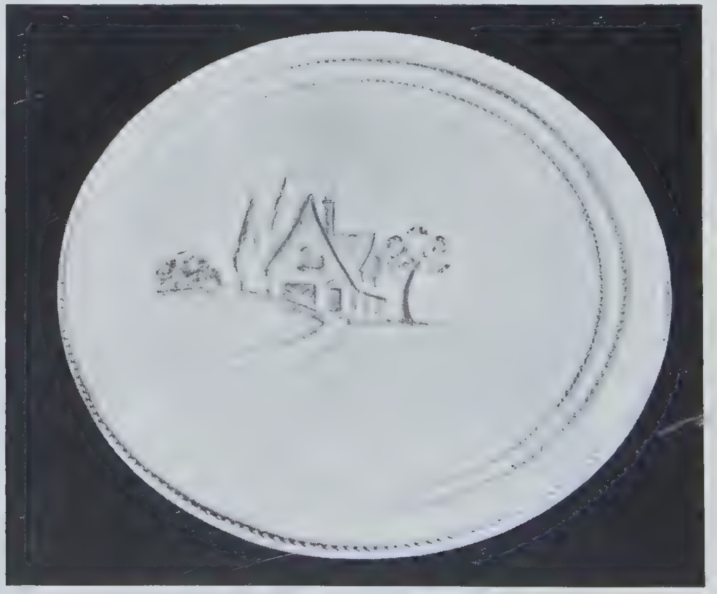


Fig. 24.2 *Use of soft sugar to give relief.*

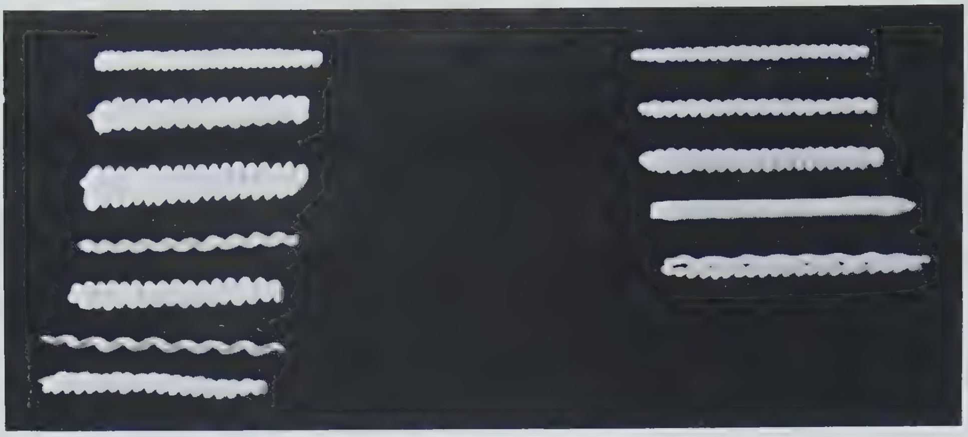


Fig. 24.3 *Exercises with star and petal tubes.*

with a contrast of colour, and dot here and there with the third colour. If this type of border is piped efficiently a very quick and neat finish is the result.

To carry this a stage further we now proceed to combine two colours, preferably keeping to pink and white, for this will blend with almost any base; although it is possible to combine other colours, white with green, yellow with green, or even two distinct shades of pink. In filling the bag we place the coloured sugar down one half and then fill the other with white. Before piping, squeeze some of the sugar from the tube to ensure that equal quantities come out, or at least that sufficient of the coloured sugar is released, and be sure that the coloured sugar is piped on the outer edge of the border. A green line is next piped on the inner side, and a fine scallop and dot border in the same pink is added inside the green line.

USING PETAL TUBES

We have shown under Flower Piping how a petal tube is used, now see the advantages of using such a tube for borders. It is the same idea as with a star tube only less coloured sugar is used in order to produce that fine ribbon effect.

Evenness of piping is essential to create an effective border, and while the piping can be used for the whole border, it is better to use this as an edging to the main border around the side of the cake, and it is equally

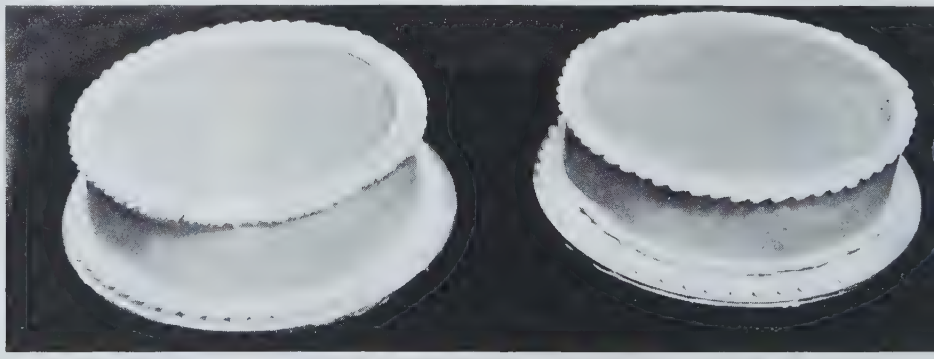


Fig. 24.4 *Star. Petal borders, complete cake.*

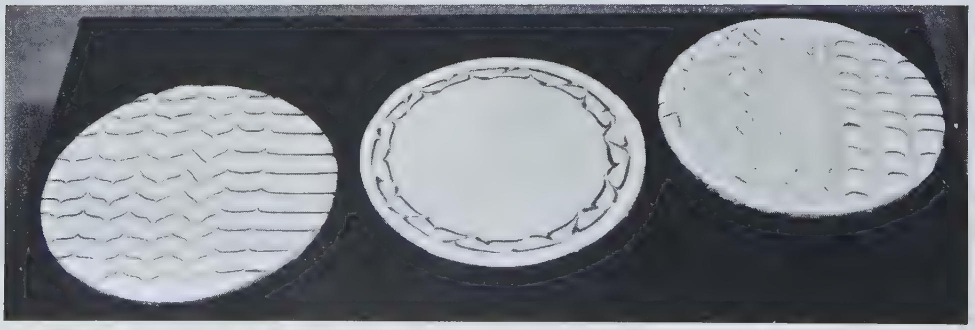


Fig. 24.5 *Examples of marbling showing the various stages of markings.*

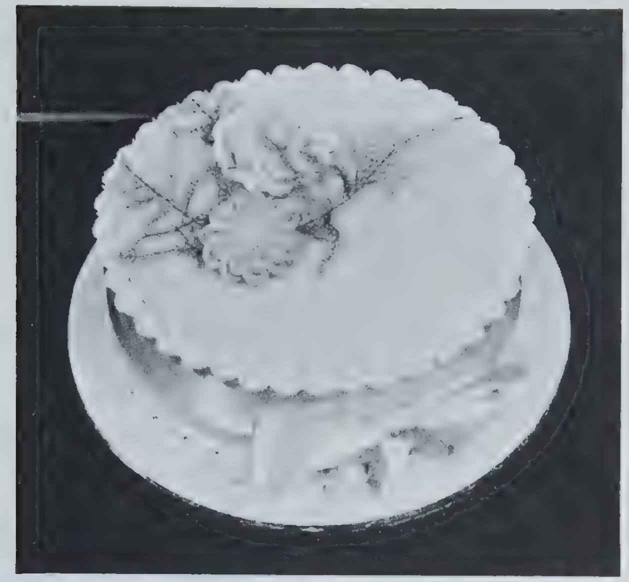


Fig. 24.6 *Commercial Birthday Cake.*

suitable above the base border. When piping borders with star or petal tubes, first see that the bag of sugar is sufficiently large to complete the border.

Keep the elbow well tucked into the side and rely on the flexibility of the wrist. Once the sugar piping is commenced, the wrist movement must be even, while the turntable is revolving steadily until the circle is completed.

With these types of continuous borders, some practice will be necessary to achieve the regularity required, and the main point is to have the icing at the correct consistency. It needs to be light yet not fluffy, and in no way dense or heavy, for unless the consistency is right it will be a very great strain on the wrist, which cannot but cause irregular piping.

When a shallower soft-coated cake is made, providing the coating is smooth, neat, and of good colour, all that is necessary is to pipe a single or double wavy line around the top edge. This could well be in chocolate and piped with a fine tube, or even a small paper bag with a finely cut-off point of a similar thickness could be used in piping the inscription. This again, although it saves the strain on the wrist, requires a good deal of concentration if the line is to look perfect. Once you have mastered these borders they are a means of producing the work more quickly and effectively.

Marbling

Marble effects in decoration are very useful and give a quick coverage, and are generally made with the use of two fondants: chocolate lines on a white base. The main feature in effecting a good finish is to make sure that the consistency of the fondants is the same so that the one will carefully blend with the other, and thus look inlaid.

The first exercise is to cover the top of the cake with fondant (white) and then pipe parallel lines equidistant with the chocolate fondant. The thin or pointed edge of a knife is then drawn across these lines in the opposite direction to the piping. The cake is then turned so that the markings are made in the opposite direction between each of the previous ones. This should be completed as quickly as possible and the cake given a gentle tapping to ensure that the sugars run one into the other. This is the accepted method, but different versions can be made with a little extra care. An even better effect is brought about by continuing to draw the knife against the existing pattern diagonally in both directions, but this must be done immediately. The same method can be employed with various coloured icings or even piping jellies, using alternate colours, or a combination of icing and jelly, for instance, on a pink base, use a chocolate fondant with red piping jelly. This of course is only suitable for a birthday cake, to be consumed within a limited period.

A different style is developed from these principles: for a run-out border, use soft sugar. All operations must be completed while the sugar is wet, and the consistency should not be too slack. First, pipe in the run-out ring, then three rings are piped equal distances apart, in two or three colours. As the turntable gradually moves, the markings are made by drawing a sharp point in zig-zag fashion through the three lines. Some very effective borders are made in this way and, when placed in position, little more will be required to finish the cake. Contrasting colours again provide the most effective finish, and a careful selection of one, two, or three colours, gives unlimited variations.

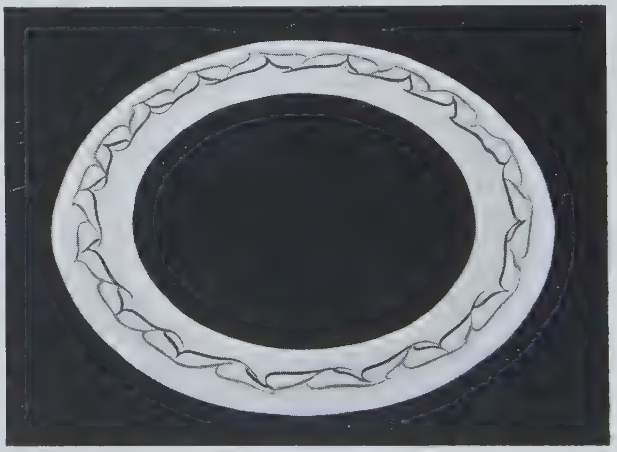


Fig. 24.7 *Marbling on run-out border.*

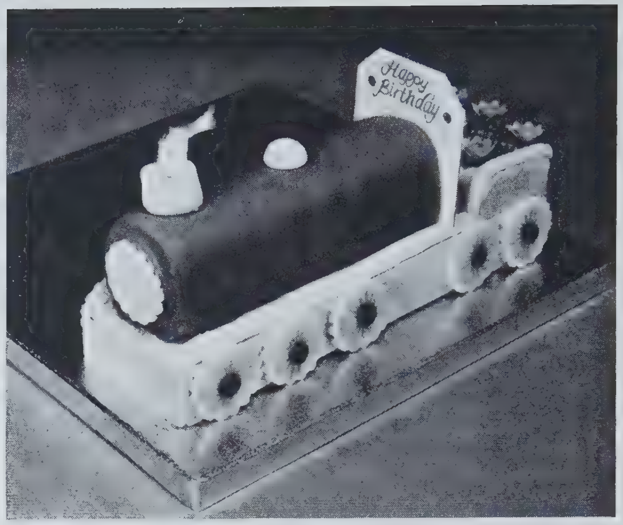
25 Novelty Cakes

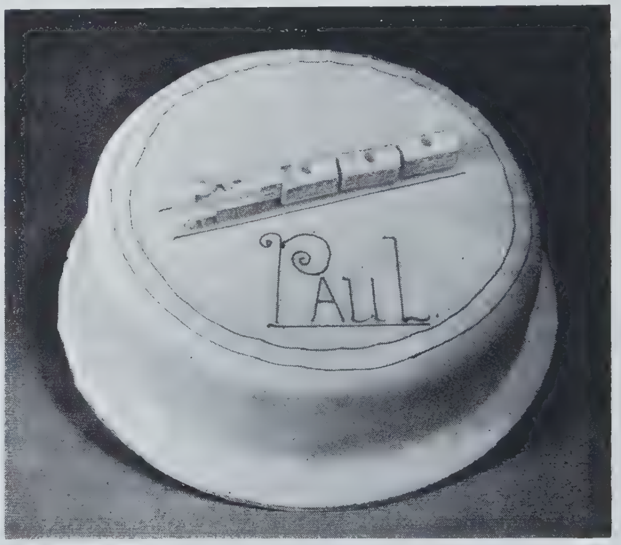
TODAY we are constantly asked for a novelty, something that has been popularized through an outside channel. Novelty cakes can be plain and sponge-type, and the decorative materials marzipan, chocolate, or sugar paste. One of the most popular themes for children is an engine, for today these appear to arouse more enthusiasm than ever.

The engine

This is based on a swiss roll and a genoese or plain cake, the size being rather dependent on the type of swiss roll used. The average factory-produced one is 8 oz. while the size of a normal bakery swiss roll is around 12 oz. The base of the engine must then be large enough to support the covered roll, when a further piece of genoese will be required for the tender. Another piece of genoese is place underneath the base, cut the same size primarily to support the wheels, and a marzipan or chocolate run-out is cut out for the cabin.

The whole of these sections can be chocolate coated and secured together, or the roll, tender, and platform can be covered with thin marzipan or sugar paste, coloured if desired and placed on a chocolate base. Wheels and funnels would be in the same material. As an alternative, the roll and tender could be given a thin coating of fondant, either by hand or through the enrober, and then placed on a chocolate base. This is a matter of taste and depends on the raw materials and time you wish to allow, but many variations are possible. Proportions are the main point, which in turn will create a realistic model.





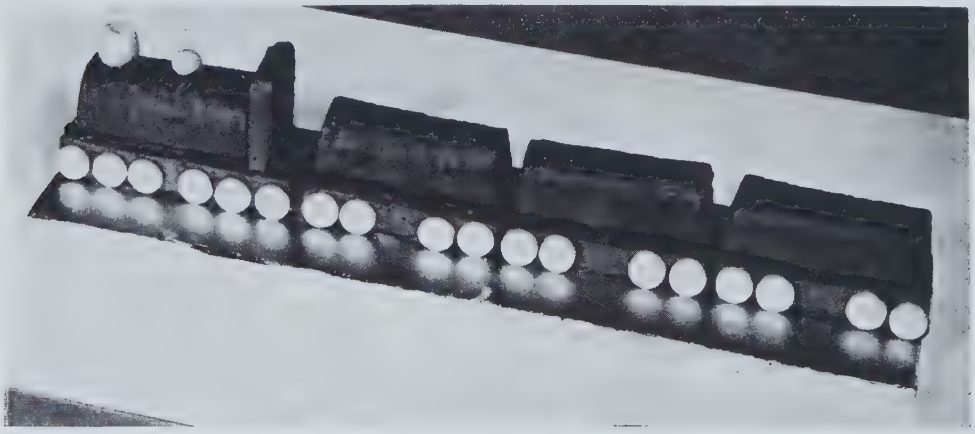


Fig. 25.1 *(Top) Engine in marzipan and chocolate. Base 12 ins, roll 8 ins, tender 2 ins.*

Fig. 25.2 *Design showing model train, centre, and border of railway lines.*

Fig. 25.3 *Mini trains from miniature swiss roll and Genoese base chocolate coated.*

Boats

A ship or sailing craft is another popular model and lends itself to some very interesting ideas. With all models, the object is to convey the likeness as far as possible, not to devote too much time and thought to details, but be sure the essentials are included.

A standard type of boat should be designed and the base cut from genoese by means of a template. Once this has been done a standard weight, size, and price results. The model will again be composed of three sections: (1) the basic shape, (2) the cabins, (3) funnel; these will be covered with white sugar paste and pale yellow marzipan for the deck and funnel.

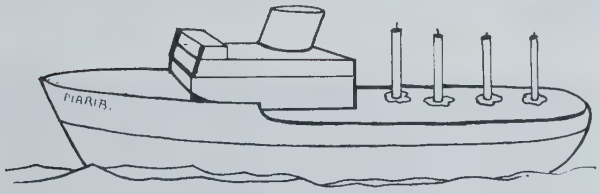


Fig. 25.4 *Drawing of boat or sailing craft.*

First roll out thin marzipan and if desired mark with a ribbed roller so that the line will traverse lengthwise along the deck. Lightly spread the cake base with jelly and secure the marzipan to it, cutting the surplus from the edge. Next roll out sugar paste to cover the sides of the boat, making sure that the paste comes above the deck on the front third of the boat, and secure the join at the front.

The cabin has now been shaped with a rounded front, and this is next covered with white sugar paste and secured with jelly to the centre of the deck. The funnel is then modelled and positioned on top of the cabin. Windows are marked out and touched with pale blue to give the impression of glass, and a little cotton wool is added for the steam from the funnel. Two buoys on the front of the deck will be sufficient, but a lifebuoy could also be included.

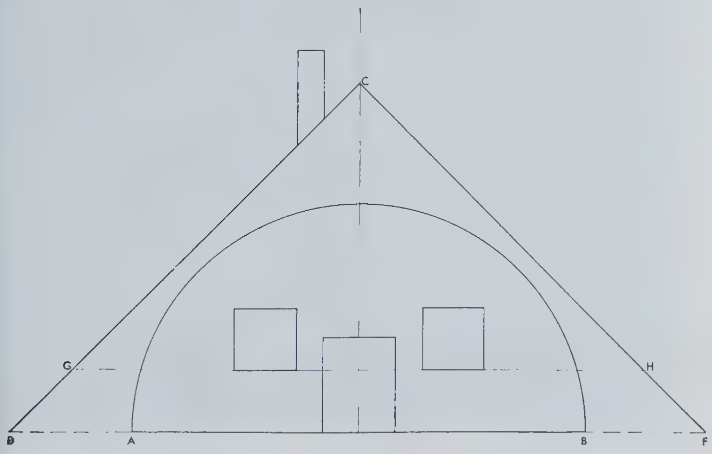


Fig. 25.5 *Sketch of house or cottage.*

A silver board, rectangular in shape, should be used for this cake, with white icing sugar for the waves. When the boat is in position the movement of water can be produced by roughening and tinting the sugar with a little blue or green colour.

Use the birthday name as the name of the boat. Candles and holders should be fixed along the deck.

Novelty houses

A novelty made from a rich fruit cake could take the form of a house or cottage – perhaps a little unusual yet attractive in design. A sketch has been drawn to act as a plan. It is designed as a semi-circle, the base of which is 7 ins. At either end the base line is continued a further 2 ins., and from between points A and B the perpendicular C is drawn. Points D and F are measured $1\frac{1}{2}$ ins. at either end from A and B. Next draw in lines CD and CF. The point C is also $1\frac{1}{2}$ ins. above the semi-circle. Line G to H is drawn 1 in. above the base line and the chimney is placed in line with the door and window. Having now completed the plan we turn to designing the cake, and based on the drawing it will be seen that a 7 in. cake base is required. Each side is thinly covered with almond paste.

COVERING WITH SUGAR PASTE

Take care to keep the edges square then cover the side of the cake, making sure the edges are perfectly sealed and squared. The cake is then cut into two halves, each standing on the flat base, to give a semicircle. The cake can now be iced with fondant, or alternatively the two flat sides are covered with sugar paste. Set the cake aside and allow it to skin over before proceeding further.

The roof is formed from chocolate coloured paste, finished with a little dry sugar, then rolled out to $\frac{5}{8}$ in. thick, and marked over with a grooved roller and cut into a 7 in. square. Cut this square diagonally to produce the same triangle as shown in the sketch. The next step is a semicircle from the triangle with a 7 in. cutter; taking care to cut near to the slope of the roof, yet maintaining sufficient strength for it to be transferred to the semicircular prepared cake.

However, before transferring, cut away the side pieces HF and BG. Having cut two identical pieces, they are now placed one on either edge of the cake circle and secured with a little egg white. Slight pressure is needed to give the correct and even slope.

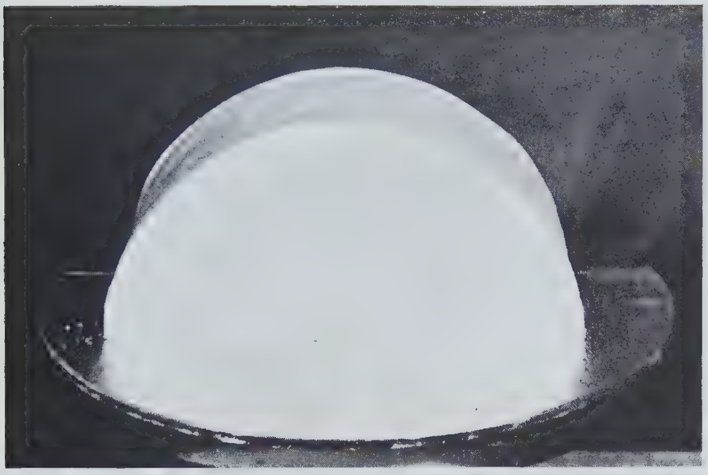


Fig. 25.6

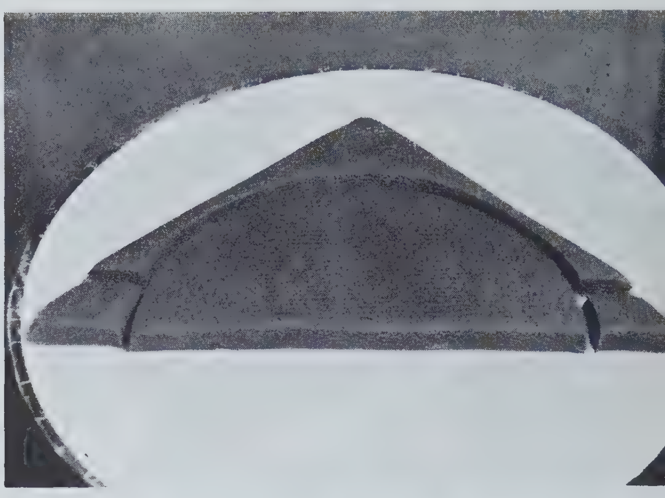


Fig. 25.7

Two sections have been cut from sugar paste, coloured a pale brick red, and either marked to give the impression of tiles with a knife, or marked with a baker's roller. The size of these two pieces is 6 × 3 ins., which just allows for a tiny overlap, giving a better finish. These should be left to dry overnight. The windows and door, cut from the same paste, are then fixed into position. The windows can be shown either closed or open. Next use the base of an 8 in. board of pale green or cream and fix the house in the centre, then fix a chocolate strip along the base of the house to represent the garden, the curved edges making a pathway to the door. Finally the chimney is placed in position, and floral borders with miniature trees are added to make a really novel and attractive house.

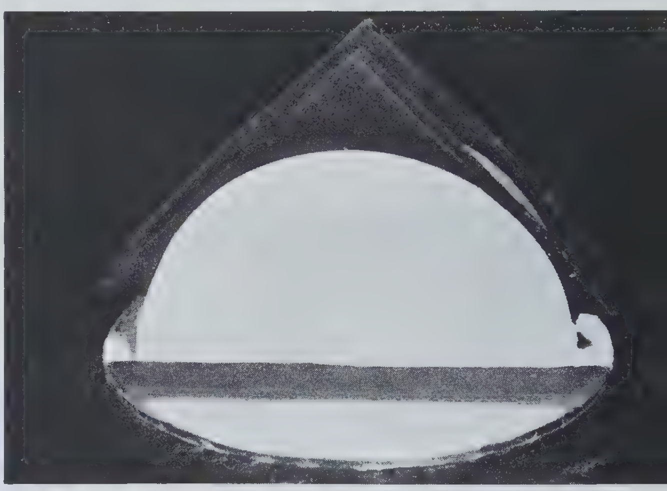


Fig. 25.8

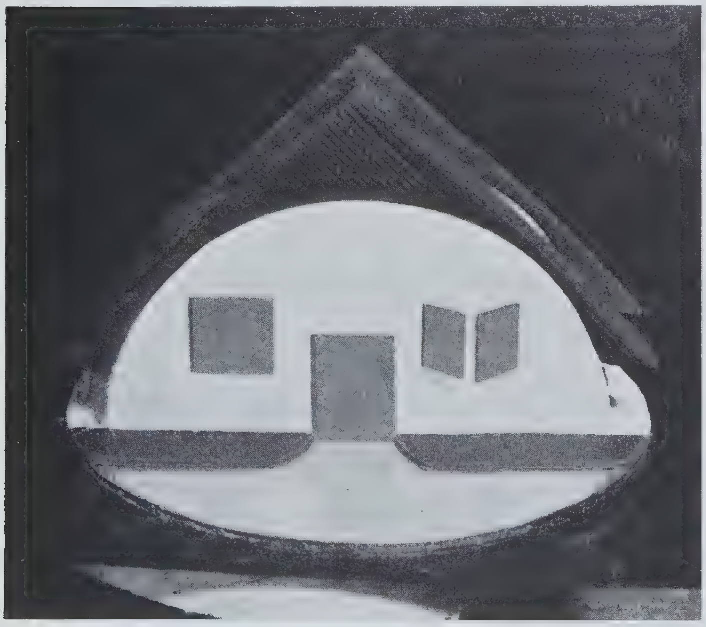


Fig. 25.9

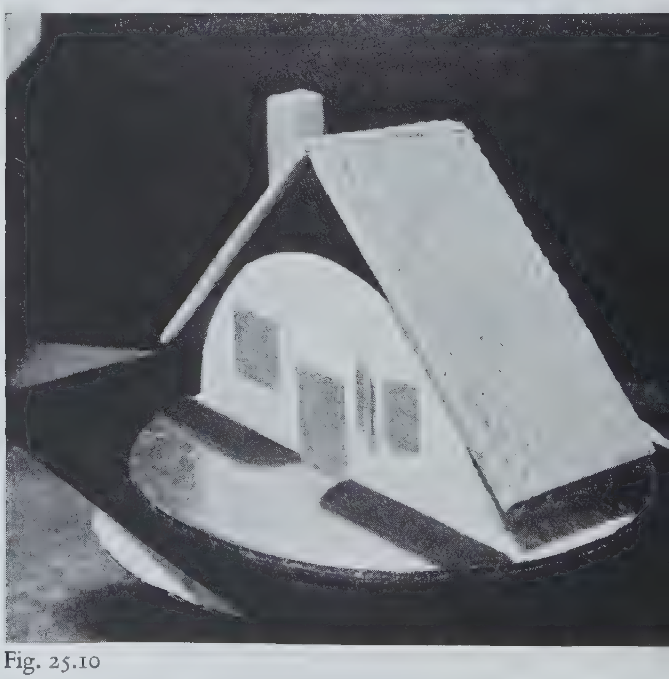


Fig. 25.10

Fig. 25.6–25.10 *Progress of make-up in stages.*

OLD WOMAN'S SHOE

While on the subject of novelty houses, we are reminded of the famous 'Old Woman who Lived in a Shoe'. This is ideally suited to yet another novelty line. The same procedure has been adopted as for the previous item. Again begin with a sketch of the main idea which shows briefly that its composition is in three sections: the base of the shoe, the miniature house, and the roof. Yet, when completed, it must look a complete unit. This novelty is much more childlike and, in view of the shape, it would be easiest to assemble if made in a standard genoese.

Two rectangular pieces of genoese approximately 9 × 4 ins. are skinned and layered with a suitable cream filling. The heel is gradually rounded at the end, cutting away as little as possible, for even if a little out of shape, this will prove more authentic. From the underside, trim a triangular section to provide the instep, and then shape the toe. A small wedge is now fixed to the top of the shoe to provide the tongue. The whole shape is now

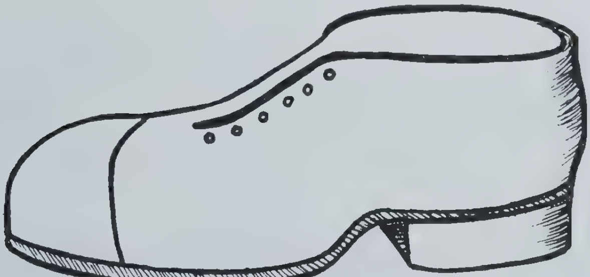


Fig. 25.11 *Sketch of shoe.*

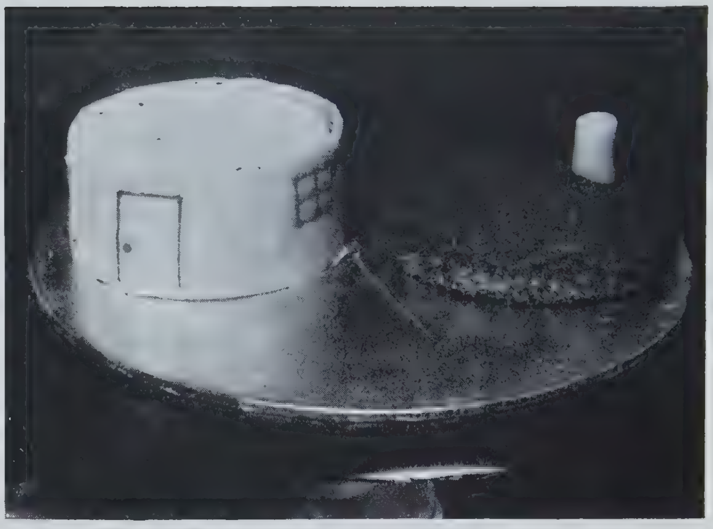


Fig. 25.13

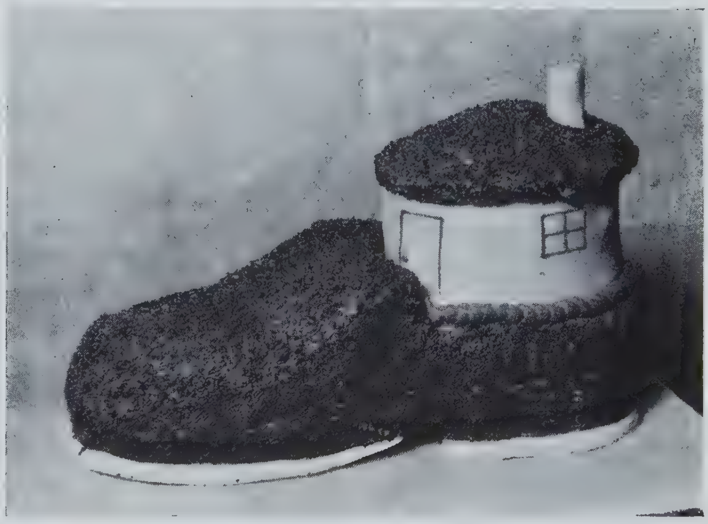


Fig. 25.14

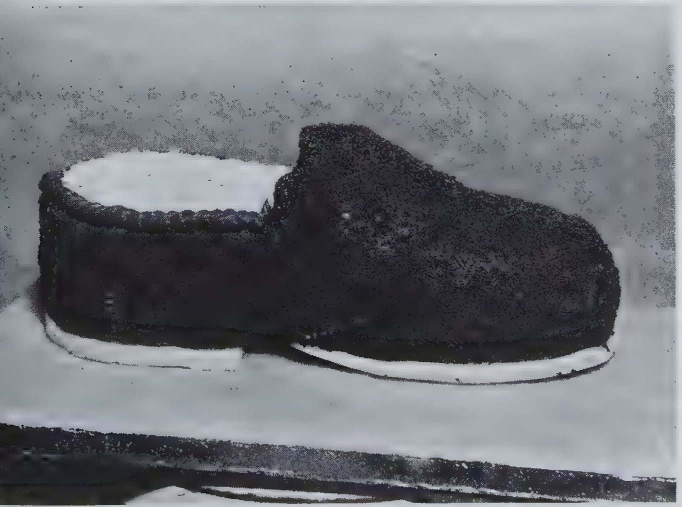


Fig. 25.12

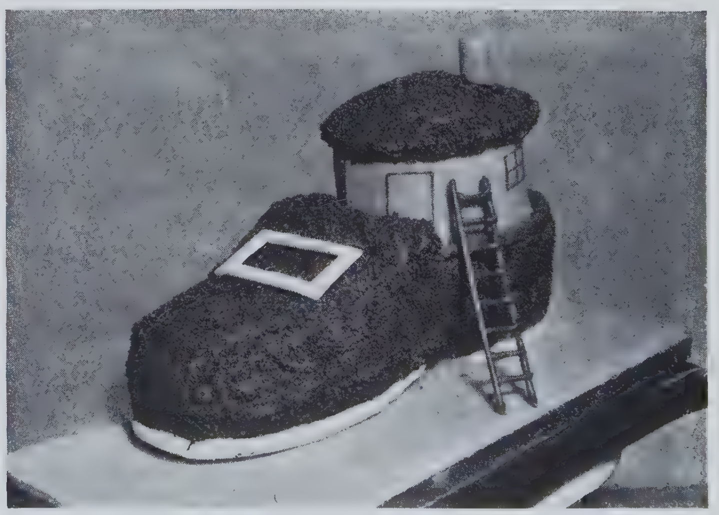


Fig. 25.15

Fig. 25.12–25.15 *Make-up of novelty shoe in marzipan with chocolate filling.*

masked with chocolate couverture quickly and evenly, and covered with chocolate strands.

The sole and heel are cut from almond paste and shaped to the pattern of the shoe. A buckle is placed in position and so the first stage is completed. The house section is now made by sandwiching two 4 in. circles of genoese, the sides of which are then wrapped in orange-coloured marzipan or sugar paste. These circles will fit upon the heel of the shoe, after which the windows and door need only be piped. The roof is shaped from a circle of genoese slightly larger than the house itself, masked with chocolate and covered with chocolate strands in the same way as the base. The roof is put on the house and finally the chimney is fixed to the top.

In order to obviate any division of the sections, a chocolate border is piped round the base of the house to join up with the tongue of the shoe. The complete shoe is now placed on a suitable board with green marzipan or sugar on the base. A chocolate ladder leaning against the house should be sufficient to complete this nursery rhyme cake.

More Ambitious Design

Something a little more ambitious is shown in Fig. 25.16. This shoe is slightly larger and covered with pale coffee-coloured marzipan. Roll this out and cut a strip sufficient in length to cover round the heel of the shoe, which should be fixed with a thin covering of jelly. Always allow the marzipan to come ½ in. above the genoese and gently form and level it to the sides. Now lay a further piece over the toe of the shoe to join that of the heel. Smooth over with the hand gently to secure it, and cut the surplus away around the edge of the base, tucking the end underneath the base. Chocolate marzipan is then rolled out to the thickness of the sole and heel, and cut round to fit the shoe. Cut away a little in the division of the heel and foot and secure the shoe with a little chocolate. Just before this sets, ease the paste with a knife to give the shape of the foot. When set place on a suitable shaped board covered with green marzipan. The centre of the shoe is cut down to insert a triangular piece of marzipan for the tongue and the holes for the lacing are cut with a No. 4 piping tube.

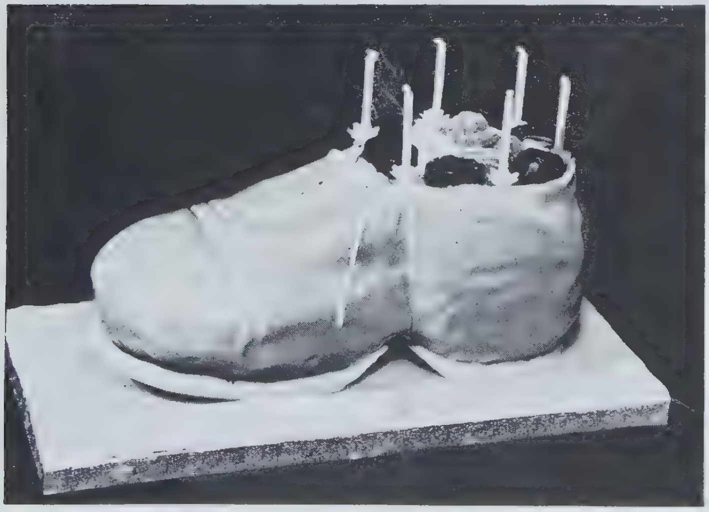


Fig. 25.16 *Marzipan shoe with birthday candles.*

Quite a novel finish is given by filling the heel with chocolates, jellied fruits or Jordan almonds. Notice, too, how the candles are affixed and how an inscription can be piped on a marzipan plaque on the front edge of the board.

Marzipan guitar

Probably one of the novelties most often asked for at this present time is a guitar, which can be presented in many ways. At first a template was used to cut from genoese, but so popular they became it was necessary to make a metal shape the same size. This was lined with greaseproof, the cake made in that shape, the top was then cut off and the cake layered with cream, next the handle was cut from genoese, and this being straight prevented any waste. The whole of the top and handle were then covered with pale orange-coloured and flavoured marzipan or sugar paste, and the sides either given a coating of chocolate or covered with cream and roasted nuts. The strings were then piped over the bridge and the length of the guitar and the stops inserted with chocolate marzipan. Various pipings could then be added to make the model authentic.

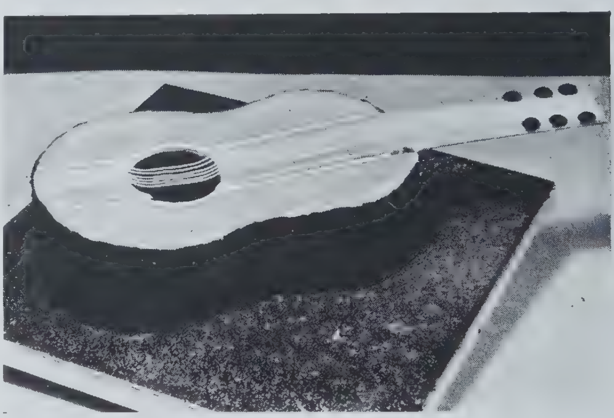


Fig. 25.17 *Guitar (cake).*

Later, the guitar shape was baked in the tin, without the handle, and the base finished with marzipan and chocolate; then a piece of stout, coloured board, cut to length and marked with the strings and stops, was inserted between the marzipan topping and the chocolate side, then finished accordingly. This looked much more realistic than making the handle in cake. Another idea is to have a piece of thin card coloured and printed to your correct shape, and place one of these on top of the cut and baked shape. No doubt such a device may prove useful in the composition of other models.

Open book

Many requests have been received for a birthday cake in the shape of an open book and there are several well-known ideas for this subject, but the one I wish to describe is a little out of the ordinary. The cake was shaped from rich birthday cake mixture and the sides covered with a coffee-coloured marzipan. The two top leaves were iced over in fondant and decorated: one page with a university badge, under which was inserted a musical box, and as the ribbon attached to the badge was lifted, the musical box played a 'Happy Birthday to You'. A spray of roses and heather adorned the opposite page, and the bookmark bore the university colours. Note the continental style **21**, as a red plastic ornament with candle combined. The whole was then placed on a chocolate cover and stood on a silver board.

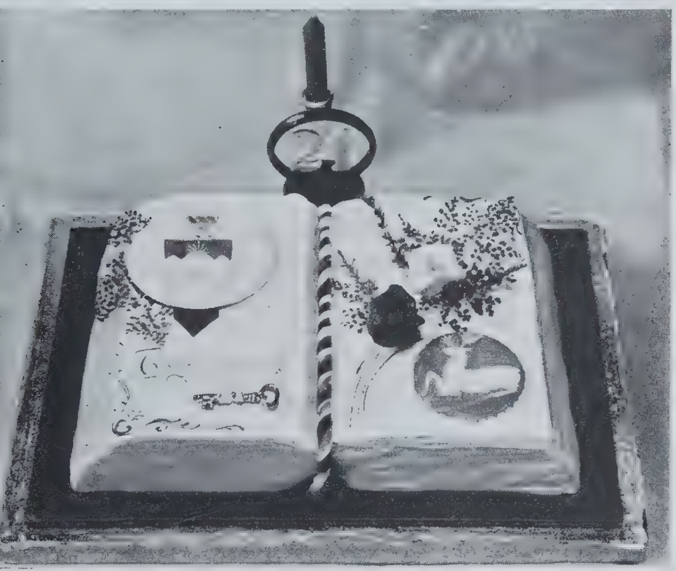


Fig. 25.18 *Book, with university badge and 21st birthday greeting.*

21st Birthday cakes

A novelty cake may be made in the shape of a key for a 21st birthday. An idea which, although it looks a little more difficult, can be produced fairly simply. This particular key was made from fruit cake and the circular end is a cake 5 ins. in diameter. The length of the key was cut from fruit cake and the small portions of the key, as you see, were cut from the original length of cake, one a little smaller than the other; a little jelly is needed to secure them prior to covering with a thin layer of marzipan on top and sides, which will give support. The prepared cake is then given a coating of soft royal icing and allowed to set, whereupon it is coated over with reasonably thin fondant. Placing the cake on a dipping wire will allow the fondant to be gently shaken so as to run smoothly, and it will not need any smoothing with a knife. The iced cake is then transferred to a cake-board, previously cut to the size required, and the base of the board is iced with the same fondant. The cake is then neatly lined and bulb-border piped along the top edge and decorated with a miniature spray of flowers and a large **21** at the end. Many variations are to be made on this theme, but you will agree that the difficulties of achieving a good finish are not so great.

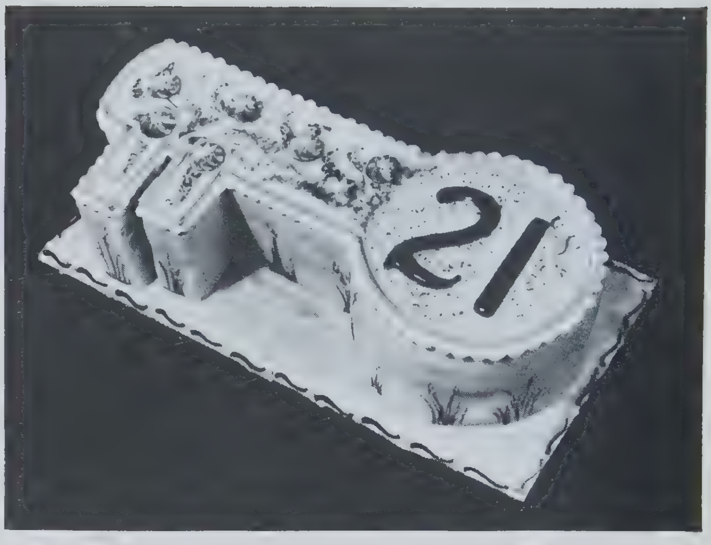


Fig. 25.19 *Key shape as 21st birthday cake.*

SQUARE CAKE

A very popular 21st congratulation cake is based on the run-out design Fig. 25.21. The total weight of the finished cake is 12 lb. so a 6 lb. square cake base is required to begin with. The run-out is simplified as far as outline is concerned, and reasonably quick to fill in. Similarly the trellis work is not too deep and is only piped one way, so that the line work becomes more consistent. Once these pieces are dry, little time is needed to assemble the cake. The four net panels should be positioned either directly inside the run-out border, or immediately on the top; inside the border will give more support and a little sugar can be set between each. At the corner they can easily be disguised by fixing a sprig of heather.

The amount of line work is limited and the base border is an example of good commercial line piping. The decoration may be introduced as desired, but when mounted at each corner it does give a clearness to the design itself, and tends to emphasize the **21** supported by the key, and candle-holders may be set around the name plate.

The next figure shows how the design is extended to incorporate a sport – Rugby football in this instance. A player with club colours and ball is at each corner, while at the base a section of the run-out border has been transposed to the base border with the floral arrangement on the base in place of the top corners. Note the positioning of the candle-holders, and how the **21st** is designed along with the inscription.

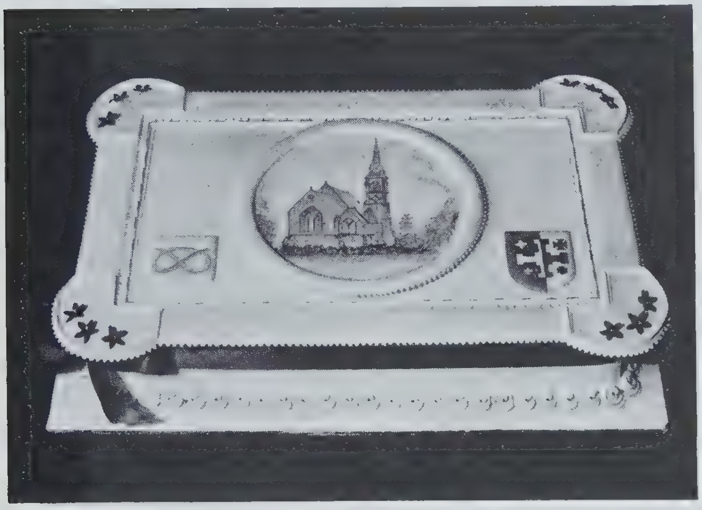


Fig. 25.20 *Church Celebration Cake.*

Centenary cakes

These are the type of cake to produce from the sheet of birthday cake. Any division of a standard baking sheet, in this instance 26 × 18 ins., is made by partitioning the sections off with a wooden strip, bearing in mind that a 2 in. depth of cake means the equivalent of 20 lb. of mixture per sheet. The one illustrated was taken from a full sheet of cake and almond iced for a centenary celebration of the church, which is the centre attraction in the cake. The badges are of the county and college in that particular district. The picture of the church was coloured on an 8 in. plaque, exactly as it stood. The remainder of the decoration was neat but commercial, with a little light piping on the main border to alleviate the bareness. The decorations were specially done, to make the church celebrations the focal point.

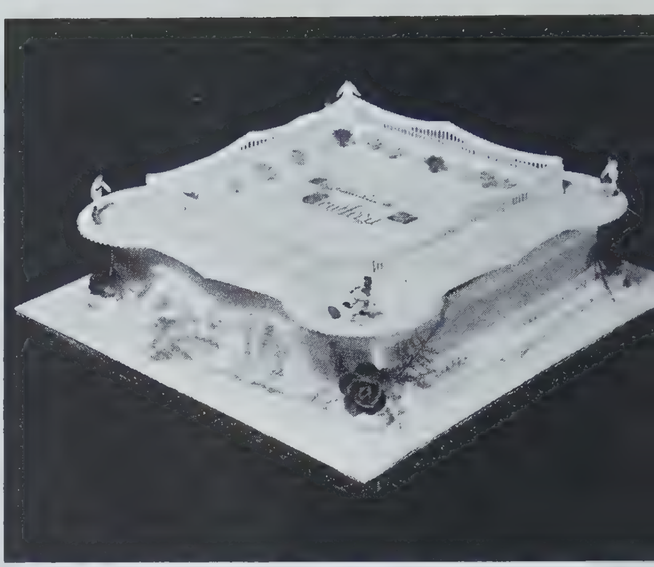


Fig. 25.21 *Cake incorporating football motifs.*

SPORTING ACTIVITIES

Sports also have their seasonal celebrations, and to show a sport to advantage a fairly large area is required and is produced in sheet form. Various types of cake centres have been used at different times, but a pleasant change from the normal mix is to make up a Russian cake. This is composed of cut pink and white genoese suitably moistened with hot apricot purée, all specially prepared, as it is not the intention to use scrap pieces. When this has been flavoured with a little rum and pressed correctly it will provide a very good base, and will cut clearly and evenly. A very thin top covering of marzipan will assist the icing, which should be in fondant or similar.

If a football pitch is required, then the marzipan will be coloured so as to serve a dual purpose, and it will only remain for the sides to be coated, and this could be done with a chocolate coating and just stuccoed or marked with a ribbed celluloid scraper prior to setting. A simple border would then complete this. The goal post could be run-out sugar or something a little more substantial, and the netting incorporated if desired though this is not really necessary; it does depend on how authentic the design is to be, plus the price that is envisaged. Various ground markings are in sugar and the ball in marzipan. Today there are very good ranges of sporting figures to be bought to cover all sports. Cup Final cakes have been made and the figures purchased or made in the correct colours, and a miniature plaque with the name of each player placed with him, at his respective position on the field. This gives some idea as to the lengths to which a sport can be taken. It just depends on the occasion, and on what is required. Cricket, tennis, swimming, and racing of all descriptions come within this category, and miniature models are always available.

26 *Party Cakes*

In the case of children, the party cake is the most important feature of the birthday party, and a never-ending source of delight to all the guests. Whenever we think of a children's birthday cake, we are accustomed to mould our ideas on the plain or sponge type of base. Such a cake is, as a rule, layered with a subtle flavoured cream, topped with a thin layer of marzipan and iced over with a soft coating of sugar. Therefore all the various ideas will be built on these principles.

Numerical cakes

Probably the most popular of all cakes during the early years is a numerical cake, which is usually required until a child is nine years old.

SPECIAL FRAMES

Special cake frames may be bought to bake the shape in, rather than to cut it from genoese, thus avoiding unnecessary waste. In every case I would advocate filling the shape so that the cake, when baked, will rise above the top edge of the frame. Each frame should be very lightly greased and lined with paper, the grease holding the paper in position and also acting as a good release when turned out.

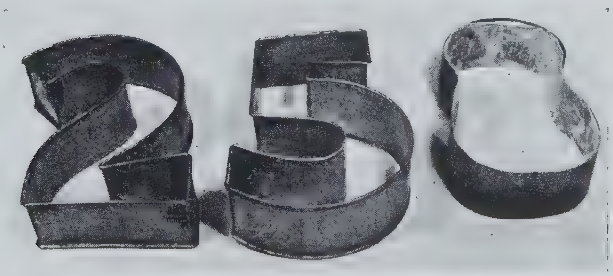


Fig. 26.1 *Special frames: numbers, guitars.*

It is somewhat difficult to assess the quantity of batter required as the frames vary in size, but provided sufficient cake is weighed in, a standard depth and layer is maintained. When cold, remove the paper from the side. A wooden frame has been devised which will enable two layers to be cut, but in this particular instance only one layer is required. By placing the cake in the frame and cutting with the knife, through the divisions, the cake is cut level and even, but first cut along the top edge of the frame to remove the top of the cake and so arrive at a level for the marzipan topping. The centre is then layered with a suitably flavoured cream.

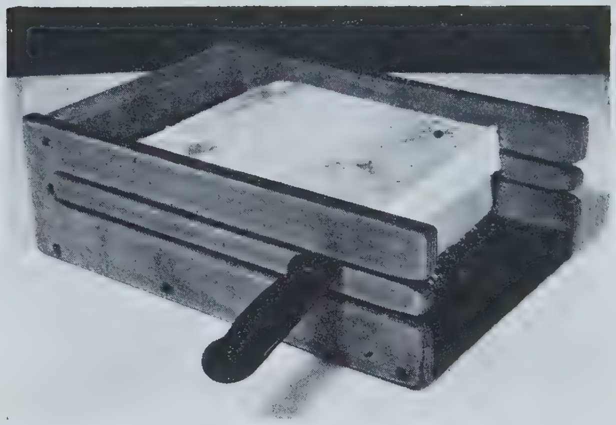


Fig. 26.2 *Cutting frame.*

COLOURING

Generally speaking, a cake is made from a standard lemon or yellow batter, but if you wish to create something just a little better, then there is no reason why the cake should not be made in the same colour as it is to be iced. If pink icing is required, then use a pink cake mixture, with a strawberry flavoured and coloured cream, not forgetting to colour the marzipan topping pale pink. You will be surprised at the difference this makes, particularly when cut, if all the colouring throughout is of the same delicate shade. Remember, the same careful attention should be given to colouring the cake batter as you exercise in colouring the icing. High colours spoil the effect, besides looking unpalatable. A little less colour in the batter, preferably french pink, will give a pale orange colour to the cake, so this will make four different colours with only the addition of pink – the basic yellow cake being used for a white or lemon icing. Details such as these will serve to create a higher standard, and little more time, if any, is required to do this.

When the cake has been prepared, it is advisable to give a thin coat of royal icing to secure any crumbs, prior to coating with fondant and soft icing. The decorative border should be simple and neat so as not to destroy the line of the figure. However, if you do not have numerical frames, a saving of outlay can be made by carrying out a similar procedure with a round cake. Providing the surface is large enough, which would probably mean a shallower cake, then a large figure is outlined, and even filled with a soft icing, and other decorations may be suitably employed.

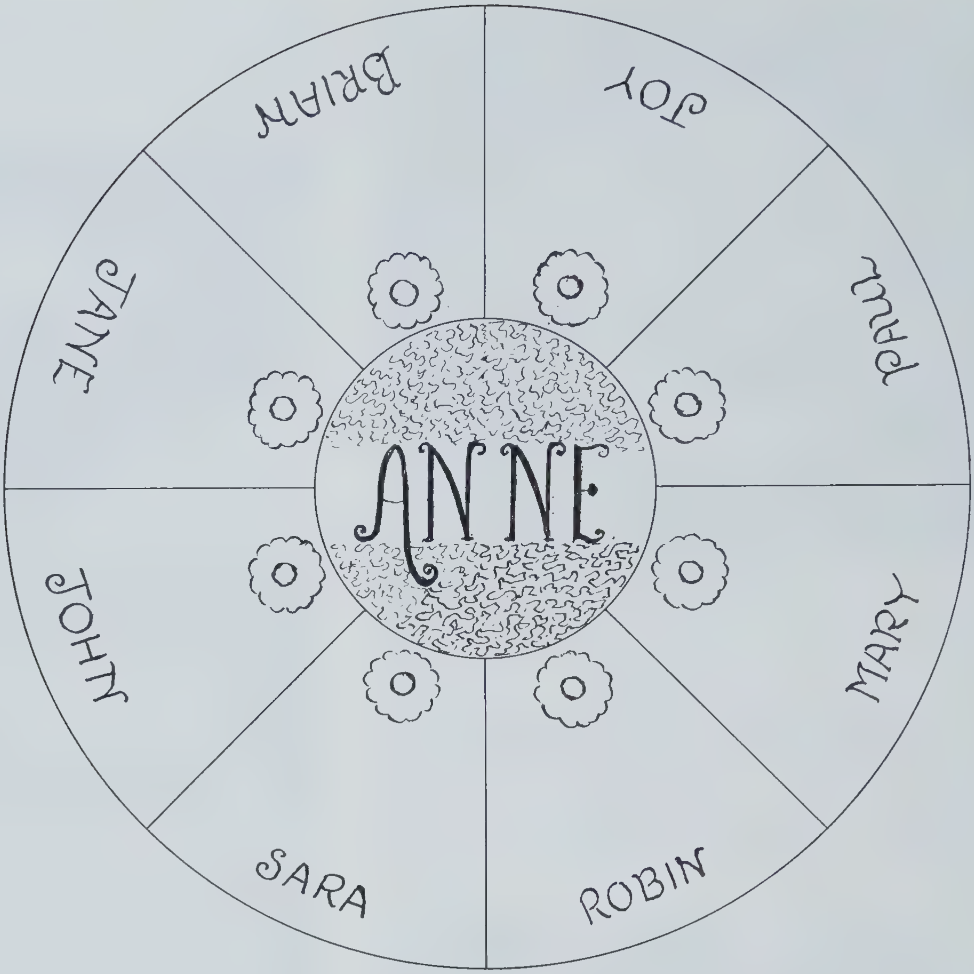


Fig. 26.3 *Segmented cake drawing.*

Name plates

A party cake which always creates a great deal of interest is produced by icing a round, shallow cake with a depth of 1½–2 ins. The cake is then segmented with piped lines and any number of segments may be used. In each section, the name of a boy or girl attending is inscribed, together with a miniature decoration, so that they all have the portions with their own name on. If the party is mixed, then the boys' names will be in pale blue and the girls' in pale pink; or if the names are piped in various alternate colours they are very effective. The names always commence near the outer edge, then any decoration may be set in the centre and still the required number of candles and holders may be fixed in the respective divisions. The plastic type of candle holders are by far the best and are very colourful and only add to the beauty of the cake.

Another party idea is to have the name of the child piped on an iced biscuit or even a chocolate-coated biscuit, instead of on the cake, each one being placed on the table, where the respective child will sit. It is little things like this that attract children and impress their minds, and in later years can create a certain amount of competition between them.

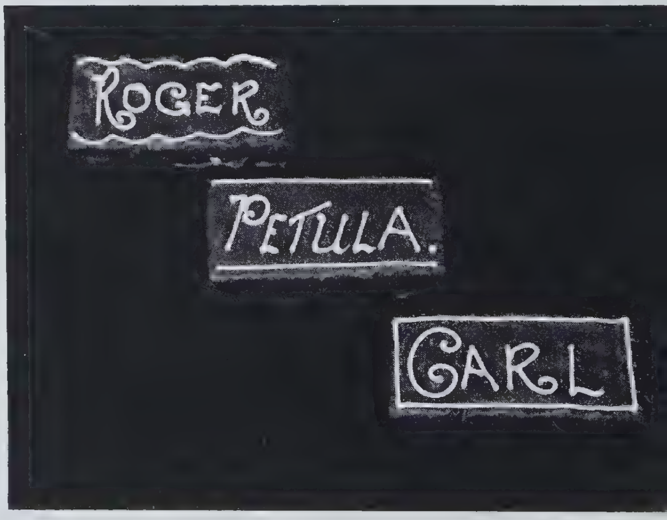


Fig. 26.4 *Biscuits, with chocolate Genoese names.*

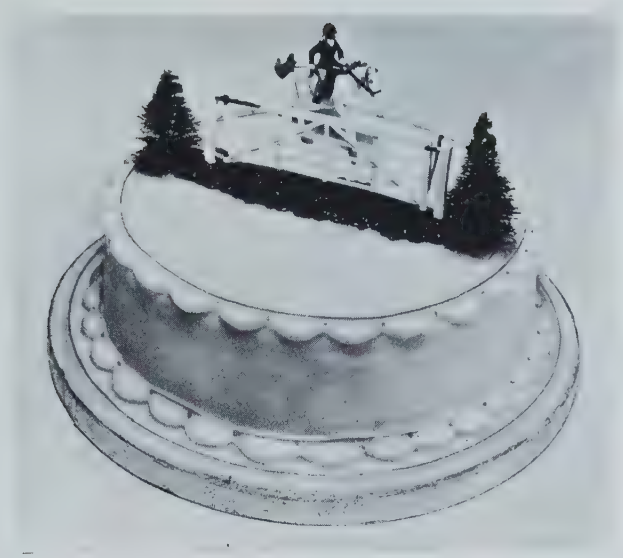


Fig. 26.5 *Horse jumping.*

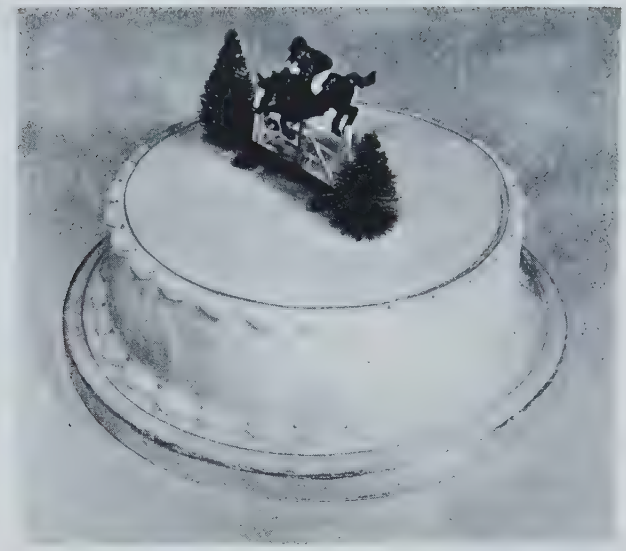


Fig. 26.6 *Show jumping.*

Decorations

The above are primarily for the youngest ones, but the slightly older child, no doubt, would appreciate something a little more realistic. One way would be to include in the decoration some sort of miniature toy or model, so that the child has something left when the cake is gone: a doll or teddy bear for a girl, a miniature train for a boy, while later on the sports may be included.

Horses and Ballet

Decorations to suit all these occasions can now be purchased very reasonably and are ideal for those who have little time to devote to making such things. Animals such as horses, however, and even horse riding and jumping, are very easily portrayed.

The increasing number of girls who take up ballet is represented by very attractive ballet figures, and one such figure, suitably placed, will be sufficient to achieve what is intended.

FRUIT AS BORDERS

A wide selection of jellied fruits, with exceptionally good flavours, are obtainable in various sizes. For example, take a jelly strawberry and cut it in half lengthways; now if this is affixed to a pink iced cake, so that the clear-cut surface is uppermost along the edge of the cake, a continuation will make a very attractive and unusual border. This eliminates piping, and only a little line work on the top is needed to complete the border. The same border may be repeated at the base or replaced with a suitable sugar border. Fruits can also be sliced and placed on the top of the cake, formed into the petals of a flower.

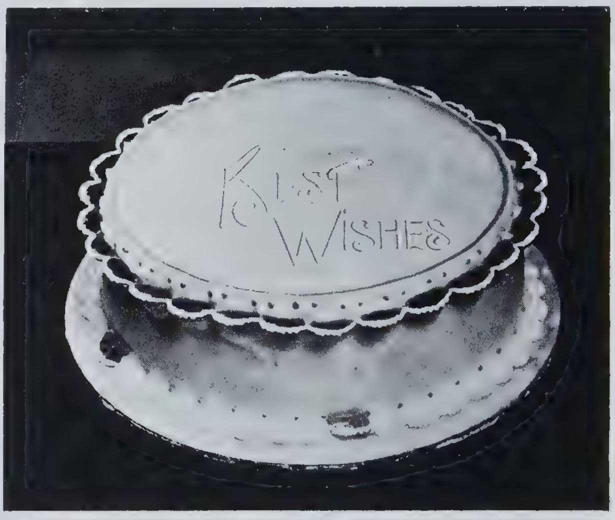


Fig. 26.7 *Jellied strawberry border.*

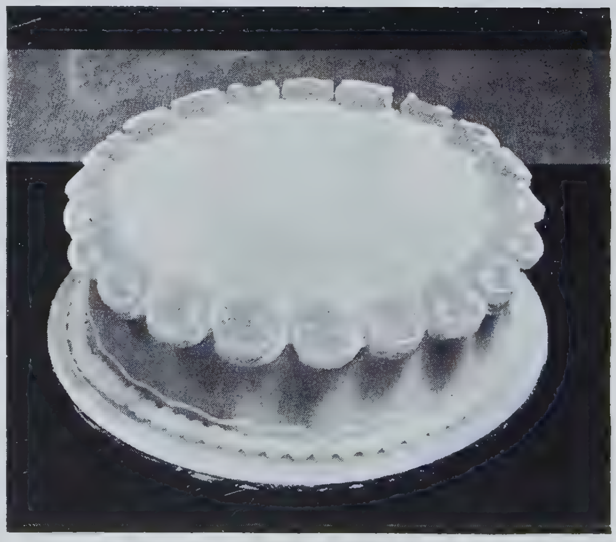


Fig. 26.8 *Orange circles.*

27 *Exhibition Commercial Cakes*

Exhibitions are invaluable in promoting enthusiasm, the joy of competing and the act of designing and colouring, and a general improvement in the standard of work. To become a regular competitor and winner, a good deal of time must be spent in perfecting every form and line of piping – a process that from the outset is slow and meticulous, but in the end its worth is shown for it raises the commercial standard considerably. Throughout the competition, controversy over the word commercial has always arisen, for what is termed commercial by one person is not accepted as commercial by another, and it has always been a subject of contention. In general, however, it means the difference in speed and perfection. The more experienced the individual in this direction, the better the finished product could be – surely the aim of true competition.

Exhibition standards

Exhibitions of the past have set varying standards, due to the diversity of the work entailed on different cakes, and no doubt these have proved difficult to judge. Today, competition work has, to some extent, been given a standard as a guide. Three graduated piped lines are sufficient for an exhibit, and overpiping has been eliminated. The use of the finer tubes, No. 0, No. 1, and No. 00, is limited to the amount of work accepted. They still have their uses, but one no longer completes the border edge so finely. Thus, with all competition work, although one has a standard in mind, a standard to look for, the competition itself will determine the standard. The more competitors there are, the higher the standards, and the judging then revolves around the finer points. The general appearance is the first attraction in any competition cake, but a study of all the work, its quality and execution, must be taken into account in assessing its final placing in the competition. Certain factors must always be considered, and one of the first is the correct coating of the cake.

Points in judging

1. A clean matt surface, free from any blemishes, particularly in the finishing line. The coating has been explained in a previous chapter, it is just a build-up of soft coatings.

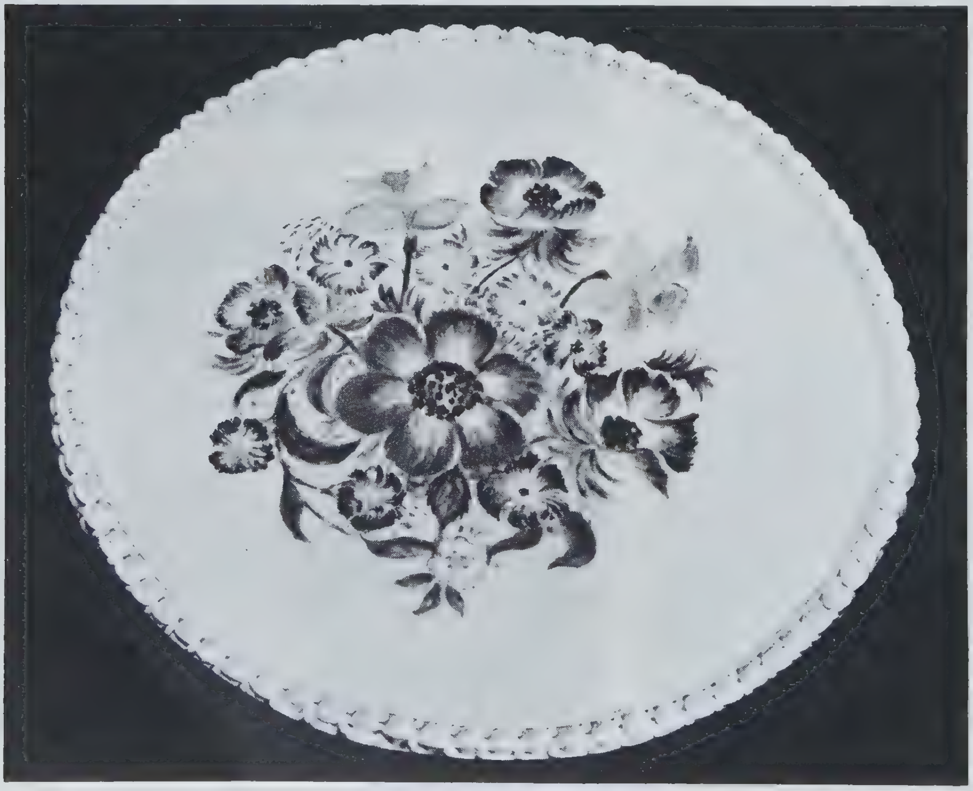


Fig. 27.1 *Düsseldorf Cake.*

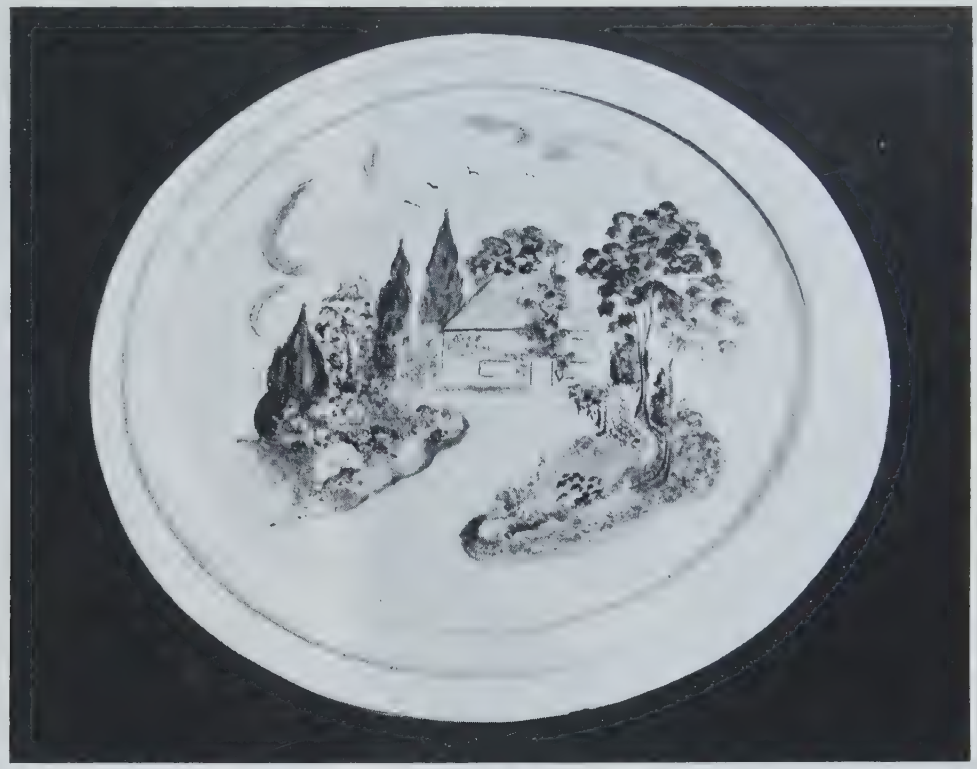


Fig. 27.2 *Landscape Düsseldorf Cake.*

2. Line work should be clean and even, with the ends brushed cleanly, showing no division.

3. Run-outs and soft sugar work should be filled to the top of the outline, be bold, without leaving any marking, and show that the sugar was correctly prepared.

4. The finish has that nice sheen we are now accustomed to see.

5. All dots should be nice and rounded, even throughout, and no points.

It is the perfection of the finer details that attracts the judges' attention, but most important is the general

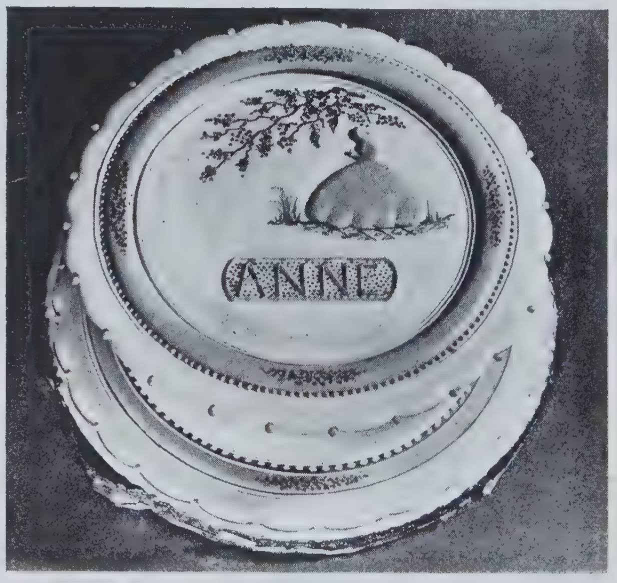


Fig. 27.3 *Exhibition Commercial Cake.*

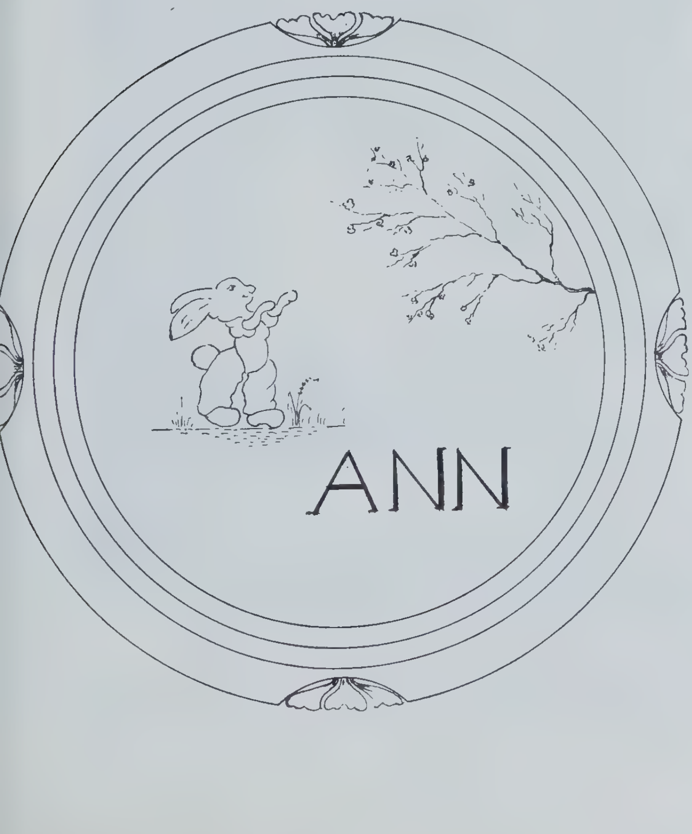


Fig. 27.4 *Exhibition designing.* (*Left.*)

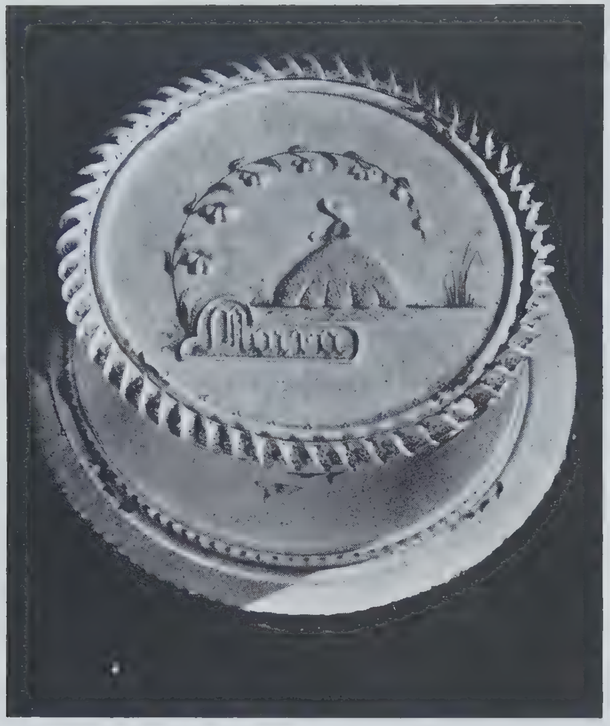


Fig. 27.5 *Piping direct on cake.*

overall appearance which governs the design and balance.

EVENNESS AND SIMPLICITY

Strive for evenness in design; and to know the precise place in which one section will look correct in comparison with others. Never over-decorate one item at the expense of others. What must be aimed at is an agreeable combination of proportions in design to give the correct balance. With colour the same applies, never have a predominance of one over another. Simplicity in design is yet another feature of the commercial art, a minimum amount of work to give the maximum effect. These are the main points to determine the commercial aspect of the entry.

Anyone who is interested enough to determine to try his skill in exhibition work should, first of all, obtain some knowledge of what is expected.

EXHIBITION SCHEDULES

Schedules are issued for the competitions and the one point that cannot be over-emphasized is: be sure you read the schedule correctly. So many times have good entries been disqualified through incorrect interpretation.

For example, in the instructions given for the cake, 'not more than 10 ins. in diameter', this means the overall dimensions, therefore the cake must be of such a size as to be properly proportioned within that diameter. If a class requires a cake, and states, 'All work to be done on the cake', this is exactly what it means. In such circumstances I have seen run-out figures made separately and added to the cake, also floral artificial sprays that have been included – and the cake has been disqualified. There are, of course, other ways in which mistakes are made, but this is sufficient for a newcomer to realize how important it is to read the schedule correctly.

Cake Travelling Boxes

In preparing your exhibit, be sure to affix your number as instructed and in the correct place, also make provision for it to arrive in perfect condition. You may purchase or make boxes in which the cakes will carry well. One way is to cut the circular size of board from a square of wood, then two pieces are left with which to secure the cake into the box. They will also enable you to arrange for the cake to be returned in good condition so that it can be used for display.

Fig. 27.3 gives an example of the commercial exhibition style. The top border is made in two sections, one being a pale green and contrasting colour to the other, and the same border repeated at the base, very simple in its finish with bulb border and a minimum of line work.

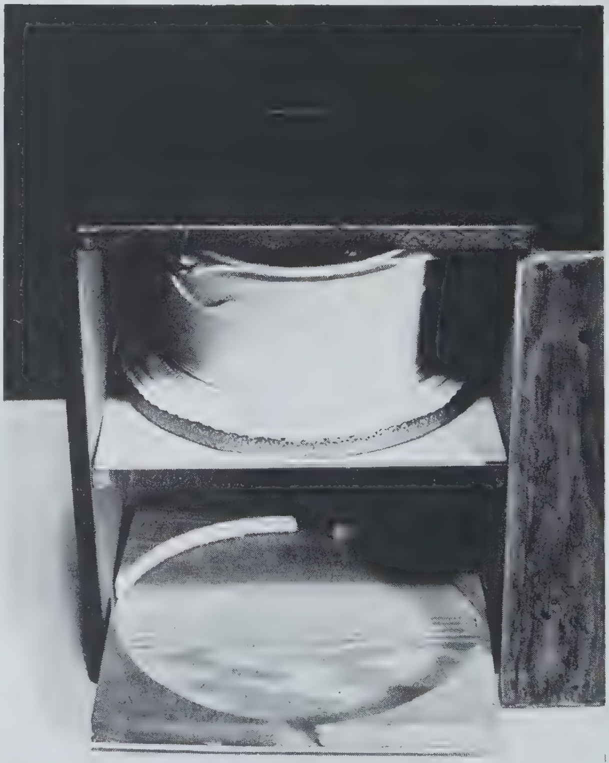


Fig. 27.6 *Boxes for exhibition.*

Colour dispensing

In the icing and decorating of a coloured exhibition cake, as with the white wedding cake, it is essential that the shade of the various coatings and piping remains the same, and some means of maintaining that same colour must be found. The best way is to prepare a given amount of sugar at the outset so that the colour can be measured through a dropper or something similar. Where a certain tone is required, for example salmon pink, you will make the sugar as near as you can to the colour you want, by proportioning lemon yellow and french pink. The ratio of colour could be two drops of french pink to one drop of lemon yellow. By increasing the number of french pink drops, we arrive at the deeper tones of pink, while the addition of yellow will tend to take us in the opposite direction.

No specific amounts of colour are given, owing to their variable strengths, but no matter what brand of colour is used, the measurement by dropper will bring about the tone of colour required. Usually the icing will tend to dry a shade lighter, but when the sugar is softened down, particularly for a last coating, the tone dries somewhat darker. These variations, however slight, must be borne in mind and only experience will give the desired result. Once you have chosen the brand of colour most suitable for you, it is possible by this method of drops to arrive a at standard. However, where really large quantities of sugar are used, a measurement in cc's would perhaps be more appropriate, for the greater the quantity the more positive we must be to maintain the standard that has been set.

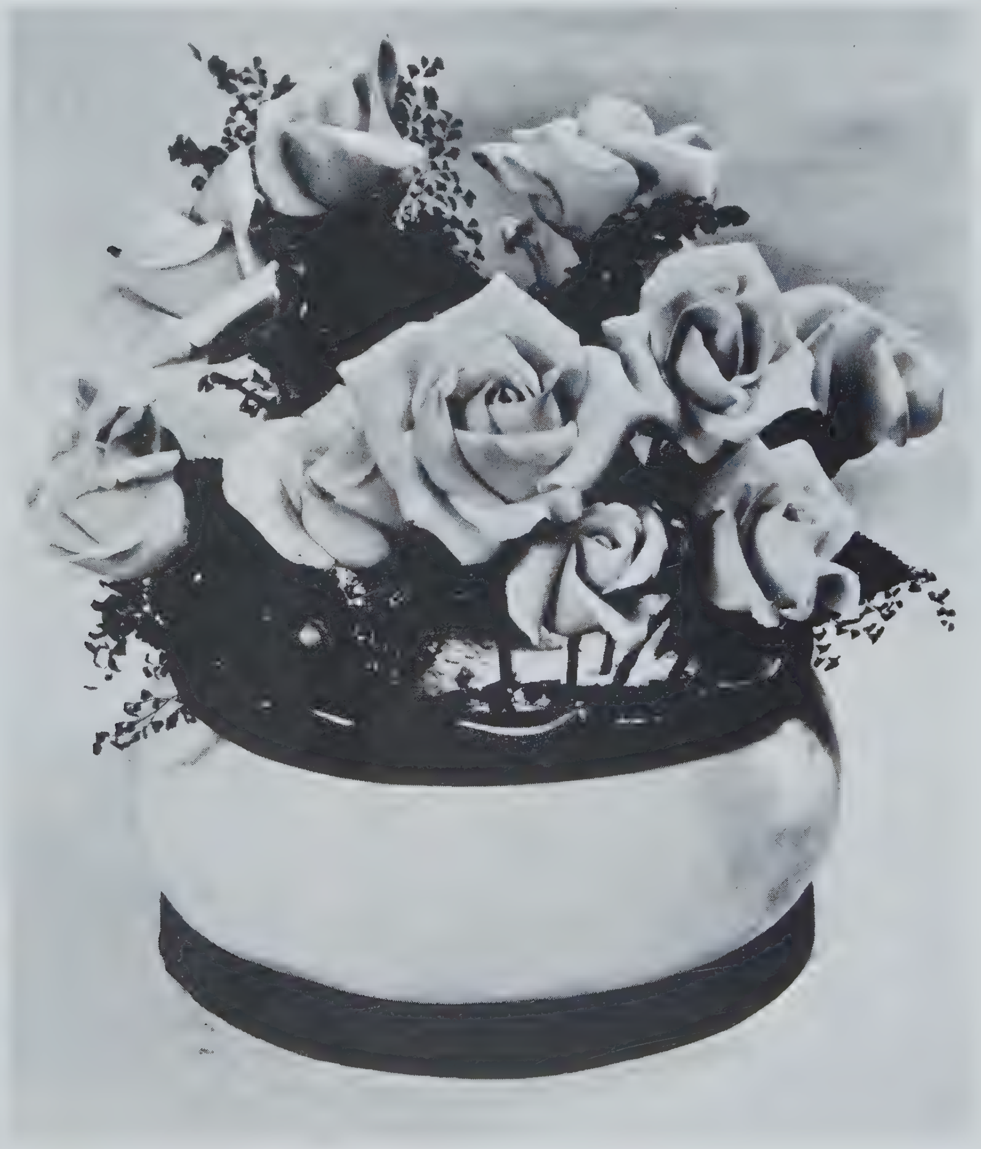


Fig. 27.7 *Marzipan roses. (See next chapter.)*

28 Marzipan

The decoration of a birthday or seasonal cake cannot be completed without some introduction to the use of marzipan. The accepted use was the formation of a rose or fruit, and its most elaborate form is such intricate models as are seen at the various exhibitions.

Prepared marzipan may be bought ready for use and only requires a little dry sugar for moulding, but the specialist in this type of work would usually prefer to make up his own. Otherwise, it is imperative that a first-class product be purchased and at once it will be seen that the utmost care has been taken to pack and dispatch it so that it reaches its destination in perfect condition. When the box is opened, the marzipan is contained in a polythene covering, and from the outset only sufficient should be withdrawn for immediate needs and the remainder securely re-wrapped. Marzipan is an expensive product and should be treated as such. If the air is allowed to penetrate, then hard, dry surfaces will appear and will need to be cut away so that no small hard particles are moulded into the paste.

The making of the paste has also been given the same care; the nuts are carefully selected and processed with sugar and made to a smooth paste through granite rollers. The refined smooth paste is cooked to blend all the ingredients together, then cooled and packed. Mechanization is now able to speed up this process and much better pastes are therefore available.

Always store in a cool, dry place, then the marzipan should keep in perfect condition, thus eliminating any possible waste.

Preparation of marzipan

The preparation of marzipan for modelling consists in mixing equal quantities of raw marzipan and finely sieved icing sugar together, to which a small quantity of gum paste is added. Using powdered gum tragacanth, mix this into royal icing sugar, then blend with the marzipan and add sufficient dry icing sugar to make into a firm but pliable paste. Never overwork it, nor use the hands for rubbing in, as this will extract some of the oil from the ground almonds, and the smoothness and plasticity will not then be as required. The marzipan will also have a tendency to be short, producing rough edges when moulded.

Some prefer to add a little fondant or glucose at the rate of 1 oz. per lb. of marzipan, but for moulding, the gum paste helps to give a fine edge and strength to maintain the moulded shape. Too much gum will naturally make the paste a little sticky, and the petals will then tend to droop. The correct consistency will soon be determined by quickly modelling a petal, just to be sure it will hold its shape at the thinnest edge.

When prepared, the marzipan should be kept in an inverted container, excluding the air, and so preventing any skin formation. The preparation of marzipan should be done preferably on a marble slab, cool, with as little friction as possible, and needless to say the hands and slab should be kept scrupulously clean throughout; the slightest foreign particle will so easily be picked up during the working of the paste.

Modelling Tools

As an aid to this work, modelling tools can be bought, and this may be of advantage to the student or beginner, but for the general modelling of flower petals the hand will be sufficient, as you will see. A muslin bag containing cornflour will prove the best for dusting purposes, while the fixing of the petals into position will be done with a small paint-brush and white of egg. Scissors will be needed for some flowers, and the finished product should be placed on a suitably lined tray.

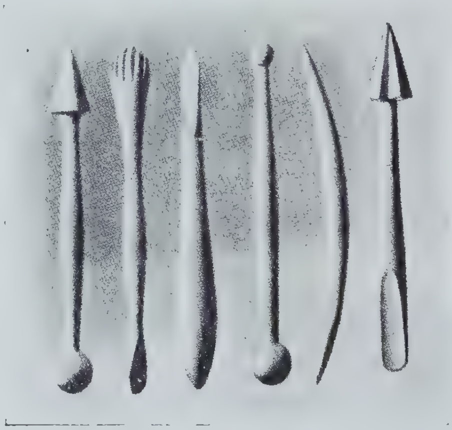


Fig. 28.1 *Modelling tools.*

The basic marzipan has now been prepared, and whatevery accessories for modelling we require are assembled. Without doubt the most popular marzipan flowers for cake decorating are roses.

Making roses

In producing a rose, the student would be well advised to copy a selected specimen, for the natural curve will then be observed, once a picture of the petal formation is clear in his mind. The choice of rose should be one that is not too open, but has a good centre formation, with well-shaped outer petals; every mark-

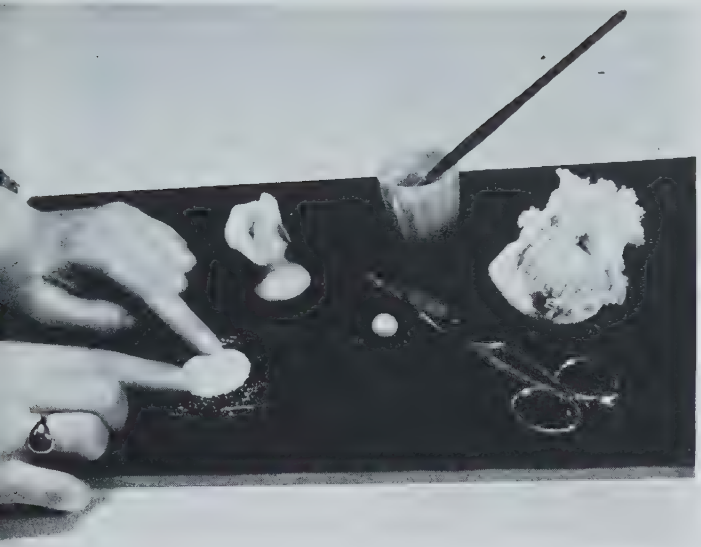


Fig. 28.2 *Making the petal. Rose petal, whites, paint-brush and scissors. Muslin bag.*

ing, colouring etc. should be copied in such a manner as to give a true to life appearance.

The making of exhibition roses for competition is very painstaking, and the petal formation is further extended, each petal more closely overlapping the last, yet still maintaining the nice bulbous shape in the centre, whereupon the outer petal will provide the true over-all shape of the rose.

Colours for Roses

For commercial purposes, the petal formation is not so extensive and is regulated as to number of petals according to the size required.

When modelling, the rose colour is perhaps more important than shape, and if you study the colour you will see that it becomes darker in the centre, and as the petal gets larger and more open, so the density of colour is reduced. Some varieties are a light shade on the inside of each petal, and darker on the outside, and in some the opposite is true. To accomplish this gradation in colour, I would suggest that the required amount of marzipan is coloured the darkest shade for the centres and the first petal. Now take a portion of the centre colour and put with it an equal quantity of uncoloured marzipan to give the next colour, which will be used for the second petal and the next row of petals. Again, take the required quantity of the second shade and mix it with equal quantities of the uncoloured paste, to give the tonal effect to the outer petals. This basically gives three colour gradations and, as equal quantities have been used, then by mixing different quantities so the variations in colour may be regulated.

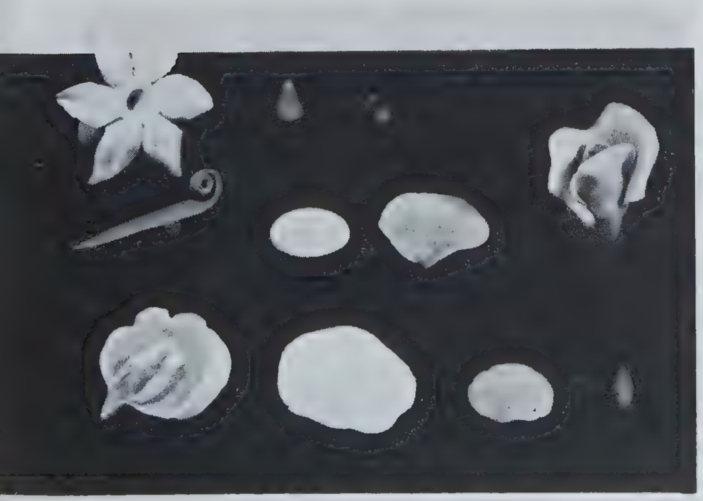


Fig. 28.3 *Formation, showing various sections (top) Narcissus, (centre) Rosebud, (foot) Sweet Pea.*

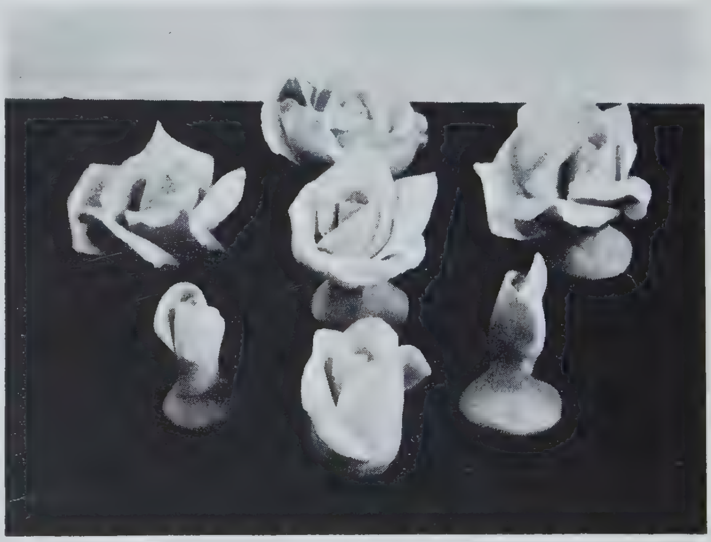


Fig. 28.4 *Roses, various stages.*

Shaping the Rose

A well-shaped rose can only be achieved if the centre is the correct shape. Mould a small ball of marzipan, and roll between the hands, to give a good pointed bud, then firm to the table, tapering at the point where the bud meets the base. Sometimes this centre is painted in the tip of the bud to give depth of colour to the centre.

To make the petal, roll the paste into a small ball and press along the edge at the top of the petal to make a thin, even, and natural petal, moisten it with a little white of egg and proceed to wrap the petal around the bud. Continue again with this procedure, wrapping round the centre, curling the edge on the left to be gently rolled back so that the next petal will start from inside the second. Always work from left to right. Following the two centre petals, three further petals, a

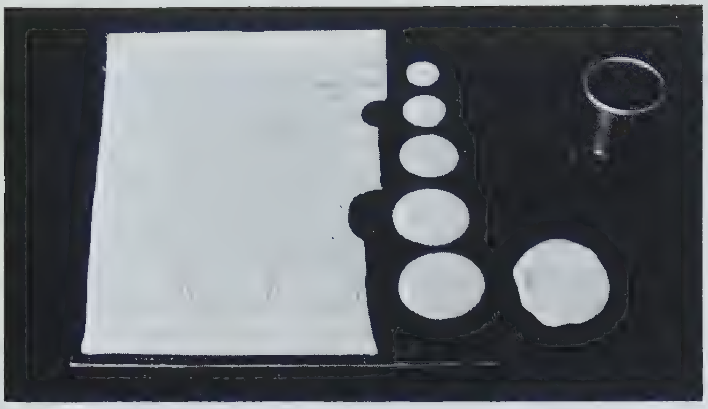


Fig. 28.5 *Marzipan cut in various sizes to give regulated petal formation.*

little larger, are pressed out for the second row, from the second colour, and securely fixed so that one overlaps the other. Either five or six petals from the third colour, a little larger still than the second set, are now thinned along the edge and fixed in the usual way, to give a nice, rounded rose.

The rose should now be allowed to set a little before cutting it away from the stem. Edges can be coloured with a little dry powder before the petals are fixed. The beautiful red rose is made by first drying it in a warm atmosphere, and then holding it on a wire over a steam pan to moisten, when it is brushed over with fine carmine powder on both inside and outside petals. Use a soft brush, so that the petals are not damaged. This creates an authentic red rose, very nice to look at, but not at all edible. Far better just to tinge the petal edges with a little colour. Further petals are added to make a full-blown rose.

HOW TO MAKE ROSE-BUDS

A rose-bud is made as previously described: simply add the two centre petals to overlap, and a further large petal has both edges curled back. The method of moulding the petal is first to form a round ball, which is then flattened on the marble slab, being kept dusted with a little cornflour. Gradually flatten, and so press along the top edge, or alternatively hold it in the palm of the left hand and gently smooth round with the index finger, so that the edge of the petal becomes very thin. The base of the petal is the thickest part, and this will give the necessary support as the petal is fixed in position.

There are two ways of perfecting the edge: either curl it as the petal is put in place, or while the petal is held in the palm cup fashion, press the centre with the thumb, which will curve the edge inwards. Now reverse the petal and again press the thumb in the centre, and you will have a natural effect of a closely petalled rose. Some of the outer petals are curled at both edges so that a point is uppermost. The curl of the petals will give a delicacy to the rose and remove any suggestion of stiffness, for it is the natural freeness of the petal formation that will give the realistic effect we desire to achieve. A good deal of time and patience is required to perfect a model in marzipan, and, as with all art, it is the details that need the fullest attention.

A method of producing a rose-bud or semi-open rose on a more commercial basis is by rolling out the marzipan reasonably thin, and cutting out the petals with various sized round cutters. To form the bud there should be two $\frac{1}{2}$–1 in. petals inside; three 1 in. petals for the second row; and one or two outer petals of $1\frac{1}{4}$ ins. When each petal has been cut all that is necessary is just to press the top of each to give the thin edge, then to fix it into position on the previously made centre.

Roses produced in this way are from marzipan of the same basic colour, for instance carmine. When this is reduced with a little cornflour it will provide the colouring either to brush on, or to be applied with a small pad of cotton wool. Other shades are made by

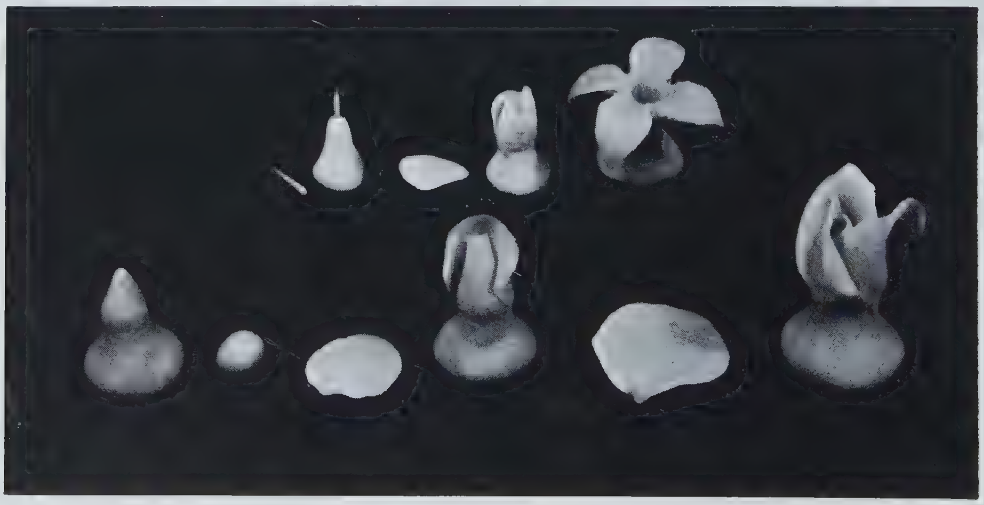


Fig. 28.6 *Formation: (top) Fuchsia, (foot) Rose.*

this method, which is invaluable where time is limited, for the petal formation can then be standardized both in shape and number, and some regularity is apparent. The commercial type must never be confused with the specialist rose, and we must work according to the occasion.

Sweet peas

This delicate flower is produced on much the same principle: three different sizes of petals, plus a pale green bud. The bud is made by first rolling a small piece of green marzipan into a round ball, then rolling it so as to make the two ends slightly pointed. The first petal, the smallest of the three, is then wrapped round the bud in such a manner as to let it be seen in the centre. The second is now moulded in circular fashion, preferably in the hand, and the thumb pressed in, while the petal is cupped. The bud is now secured to the base of the petal with a little moisture, and the ends at the base lightly pressed between the finger and thumb to make them firm. The third and largest petal is moulded in a similar manner, and a slight indentation is made in it by turning the petal inwards with the pointed modelling tool. The flower centre is then fixed at the base and just pinched to secure it. Colour for a sweet pea is mostly along the outer edge and should be shaded to the depth of $\frac{1}{8}$ in. It is the fine curled edge that gives the authentic look to the sweet pea.

The quicker method of rose making can also be applied to sweet peas. Simply cut the respective circles, press along the edge and form the flower.

Narcissi

To model a narcissus, first the marzipan must be much whiter, which means a larger proportion of icing sugar. The paste, when made, is rolled into lengths, at least $\frac{1}{2}$ in. in thickness, and cut into pieces about 1 in. long. A conical shaped modelling tool is inserted at one end of the cut piece and worked round so as to make a cup or bell shape, gradually turning the edge to the size of the flower.

The outer edge is then cut with scissors to form six petals, the corners of which are cut off so that each petal looks diamond-shaped. The petals are then moulded with the fingers. The cup centre is of yellow marzipan, formed in the same way as the petals, but much smaller. It is pressed into the centre of the white outer petals and its top edge is tinted with red colour. A little green bulb of marzipan is then placed in the middle.

Daffodils require two shades of marzipan, a pale yellow for the petals, and a brighter yellow for the trumpet and stamens. The conical centre is made as for the narcissus, but the edges are enlarged with the finger and thumb and are curved back. The inside is marked with either a modelling tool or the back of a pen-knife. The petals are shaped separately, and where the petal is shown to fall back, it must be first supported, and when all six petals have been positioned the trumpet is secured in the centre.

This may be a good flower with which to practise but its commercial possibilities are very limited.

Fuchsia

This flower is made in two sections. Firstly the cup centre is made in the same way as the rose, by interlocking four petals, allowing sufficient room in the centre for the stamens to protrude. The outer petals are made as for the narcissus but not quite so large, in red marzipan, and the edge is cut into four sections, each then being modelled by hand to obtain the correct formation. The centre is then added and the flower cut from its stand the end of which is slightly rolled to a point, where the flower suspends from the stalk. Carefully bend the petals back, to show the pink centre.

Carnations

Carnations are made with pale pink marzipan and consist of single petals, marked with the toothed end of a modelling tool, which gives a slightly ragged edge, and are then gathered together and fixed into position. The centre petals are small, and as the outer petals are added they become larger, and when fixing they are allowed to droop downwards. A little colour to tint the edges of the petals can be introduced if desired. With most of these flowers, they should be allowed to set a little before cutting away from the centre in which they have been formed.

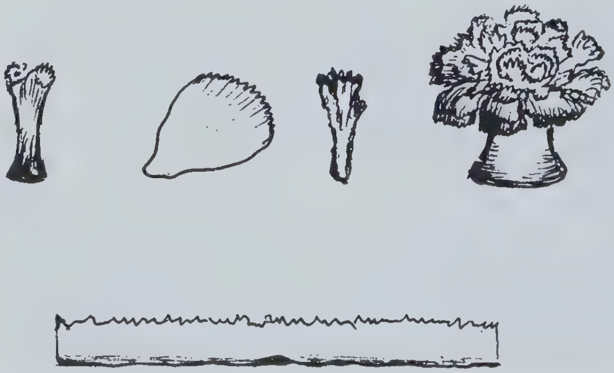


Fig. 28.7 *Carnations.*

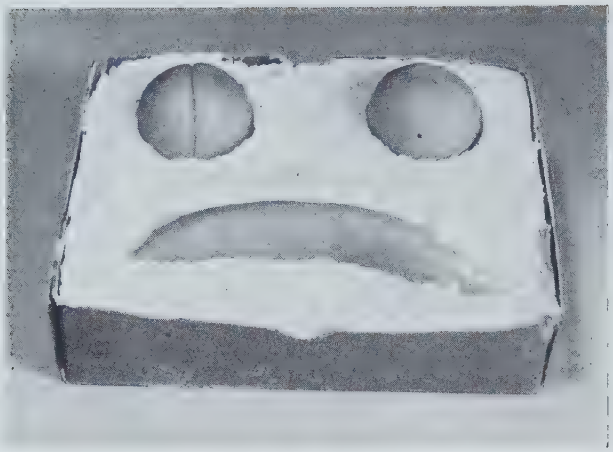


Fig. 28.8 *Starch tray for fruits.*

Marzipan fruits

With marzipan work, we cannot leave without some reference to marzipan fruits. When a copy of the real fruit is needed for competition work, then the same marzipan mix is used as for flowers, but this paste must be firmer to hold its shape, yet not so firm as to cause cracking. The marzipan must be coloured to the correct shade prior to moulding, and you should have a specimen before you from which to copy.

ORANGES

Take sufficient coloured marzipan and roll it into a rounded ball, the surface of which must be free of cracks, for it is through the cracks that germs can penetrate, to set up fermentation sooner or later, so you see the necessity of a clear skin. The indentations are made in various ways, one method is to coat two pieces of board with glue and sago or pearl barley, and when it is set if we roll the ball of marzipan between them we produce the indents required. Another method, for a smaller form, is rolling on a sieve, but for the larger fruits one should reproduce as nearly as possible. When the shape is perfectly rounded it is then placed in a starch tray to dry. This enables the fruit to maintain the rounded base, rather than allowing its weight to flatten the base. The calotte is now made with a little pale green marzipan, and inserted in the top. When dry, colour may be brushed on and again allowed to dry, then the orange is given a coat of varnish.

Varnishes for marzipan. These vary, being made from rectified spirits of wine and white shellac, but they are easily obtainable through the manufacturers of colours and essences.

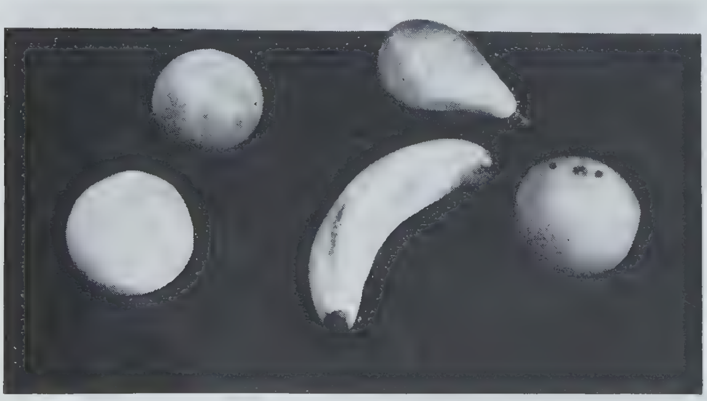


Fig. 28.9 *Marzipan Fruits.*

APPLES AND PEARS

Apples vary in colour, from yellow to green to red, and the main shape is made either from green or yellow, depending on the final colour. The indentation and bruises are allowed for, and the shape left to dry in the starch tray, before colouring takes place. A calotte or stalk, which ever way it is to be presented, is now fixed in, and the fruit when dry is varnished, as before.

The pear is made in a similar way to the apple and only the question of type and colour has to be decided.

PEACHES

Peaches are modelled in yellow marzipan, slightly oval, and the indentation is marked with the back of a knife, with a small depression at the top. When dry, it is shaded with a mixture of carmine powder and cornflour and given a dusting of cornflour afterwards. Some exhibitors like to varnish after the colour, and dust with cornflour before drying. This gives a little more permanency to the finish.

MARZIPAN BANANAS

The banana is shaped by rolling marzipan 1 in. or 1¼ ins. in thickness. The ends are cut away and tapered, while the impression of four sides is made with the flat blade of a knife. Then the banana would be given its natural curve, and placed in a starch tray to dry. Colouring can vary so much, from a green under-ripe to a dark, bruised over-ripe, so you must choose the specimen you wish to copy. Chocolate and green colours are usually the combination for the fruit at either end, and a streak at each edge.

However, for our commercial field, we need only use ready-prepared almond paste, and many kinds will be firm enough simply to roll into smaller sizes and shapes. If you wish, you could varnish them, particularly if it is intended to make a quantity for later use. To help in moulding, pieces of wood with semicircular indentation, into which the required amount of marzipan is placed, can be rubbed against one another in a circular movement to produce a nice round shape. Several can be done at a time, to make the operation more speedy.

Figures

The art of figure modelling has been developed in this country and gained some prominence in recent years, but this work is more extensively practised on the Continent. In fact such figures are manufactured in great variety and to a high degree of perfection – gaily coloured, and sometimes with a touch of comedy.

The marzipan used has certain standards laid down, and the sugar content is in the proportion of four parts sugar to six parts marzipan, but can be increased to make it more economical, though obviously the true almond flavour comes through much better with the lesser amount of sugar, and the time expended on perfecting the cheaper variety is considerable. Some types are made from marzipan, with the desired colour incorporated, while the most highly coloured varieties have the colour sprayed on. Similarly the glaze is added in this manner rather than by hand, and judging by the number sold, sufficient of one variety only would be produced at any one time. The size is also regulated and the average total weight is $1\frac{3}{4}$–2 oz. each. In various animals, like dogs, elephants, etc., the body is generally moulded over a given shape and allowed to set before other parts are attached, while others are made to give an impression, by rolling the marzipan to a thickness of $\frac{1}{4}$ in. and forming the shape of the head and body combined.

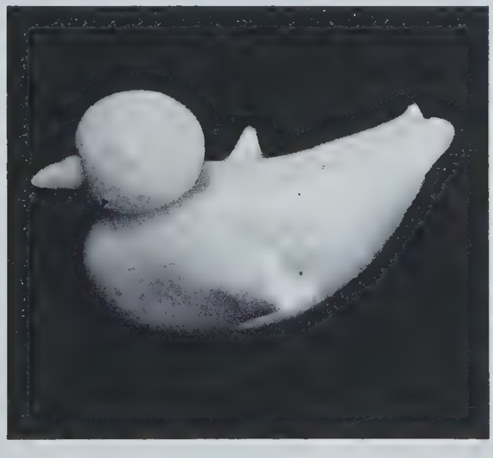


Fig. 28.10 *Chick.*

DOMESTIC BIRDS

A chick or bird is made in two sections only: the body moulded in one piece to the wings and tail, cut with scissors and curled into position, and a round ball of marzipan for the head. Make a small hole to mark the beak, also add the eyes with a little sugar, and colour the pupil in chocolate. Simply made as this figure is, it is surprising how quickly it could be converted into a duck or other kind of bird, such as a pigeon, fan-tailed or otherwise. Colours are added to give the natural effect.

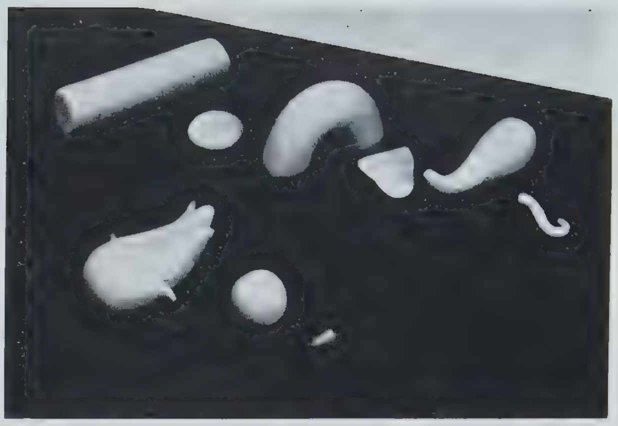


Fig. 28.12 *Stages in modelling: (top) Elephant, (foot) Chick.*

MARZIPAN SWANS

The model of a swan is made from a single 3 in. roll of marzipan. One end is tapered to form the tail, and the other end tapered but more elongated to give the delicate form of the neck. By gently rolling the end between the two forefingers the beak is formed, and the head given its perspective. The neck and head should be at least as long as the body, so that the natural curve of the neck is faithfully produced. Slightly curl the tail before the wings are cut with a round cutter, from pinned-out marzipan. By cutting the circles in half and bevelling the edge with the fingers, the shape of the body is then completed. One or two marks on the wings will indicate the feather formation, and finally finish with a spot of sugar in either side of the head with a dot of chocolate for the eyes. A little orange colour for the beak will complete the figure.

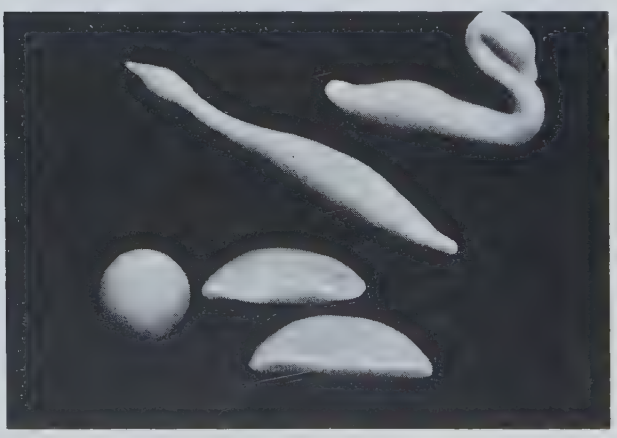


Fig. 28.11 *Swan: stages in modelling.*

CLOWN AND ELEPHANT

The next figure is in the form of a clown and shows how this is built up, having a chocolate base to commence with, a white ball for the body, a red cut-out for the collar, white for the head, and red marzipan for the mouth and hat. The eyes and arms are piped in sugar. Buttons in red, and white for the two feet. The basic marzipan is coloured to contrast with the white.

The elephant is the type of animal produced by moulding the shape of the body round something circular, then cutting the end off to a level so that the figures stand firm. The head is next moulded, and the ears cut from rolled out marzipan, and shaped accordingly.

For the student this is a particularly interesting side of modelling, and the results can so easily and quickly be appreciated.

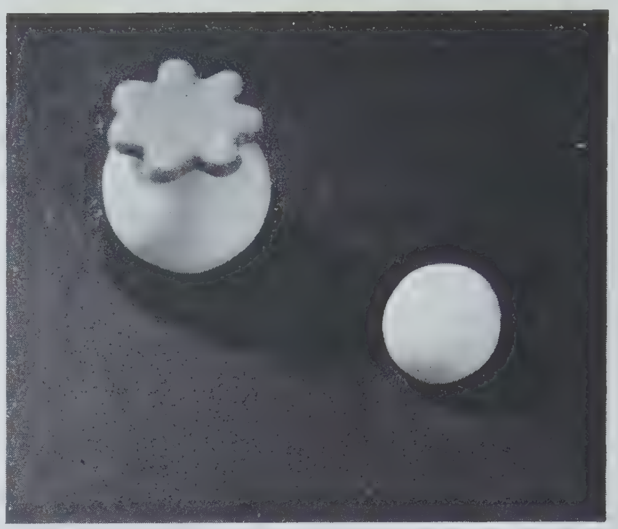


Fig. 28.15

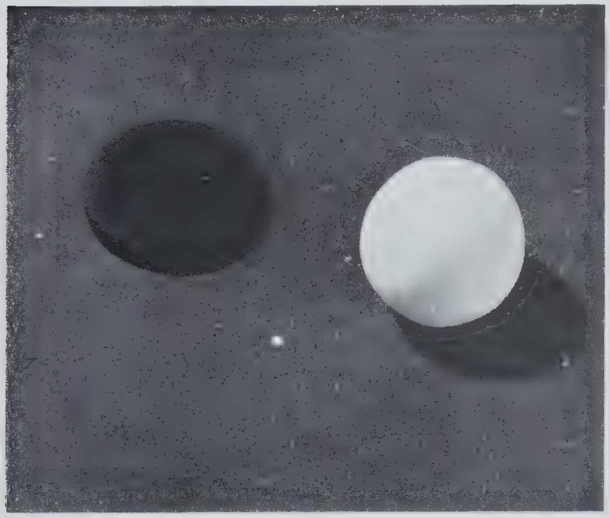


Fig. 28.13

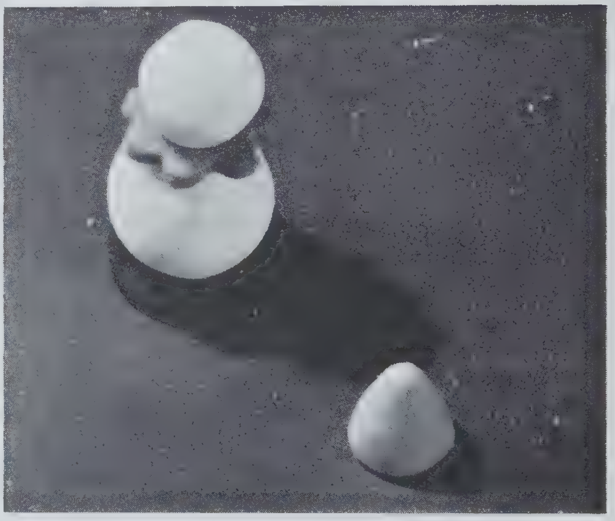


Fig. 28.16

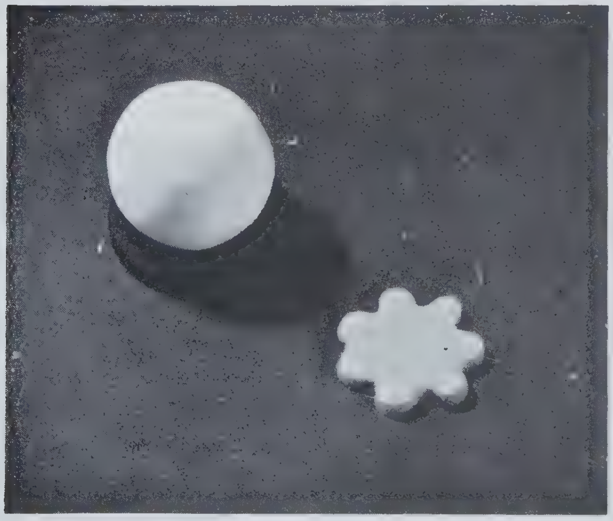


Fig. 28.14

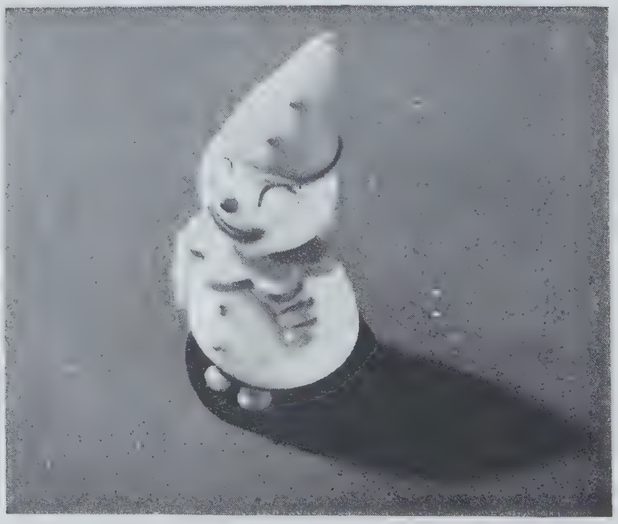


Fig. 28.17

Fig. 28.13–28.17 *Clown.*

Fig. 28.18–28.20 *Circus cake with Seals and Clowns.*

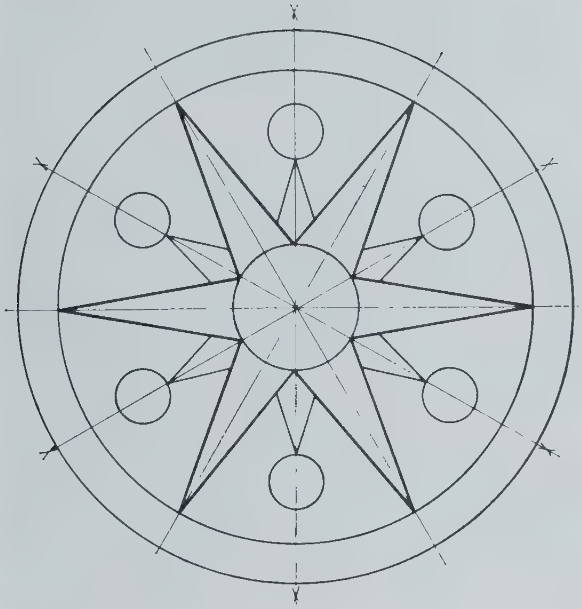


Fig. 28.18

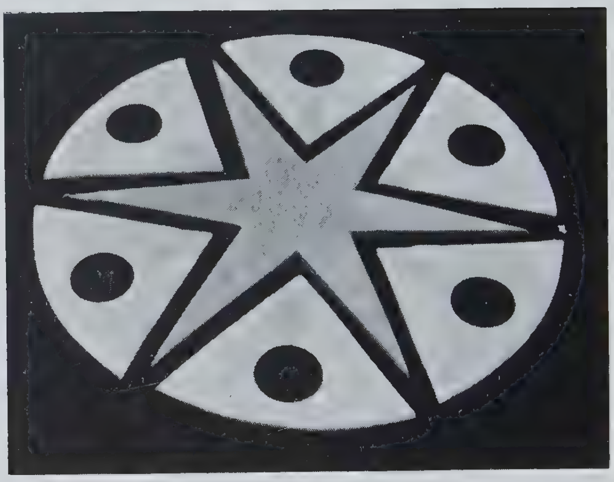


Fig. 28.19

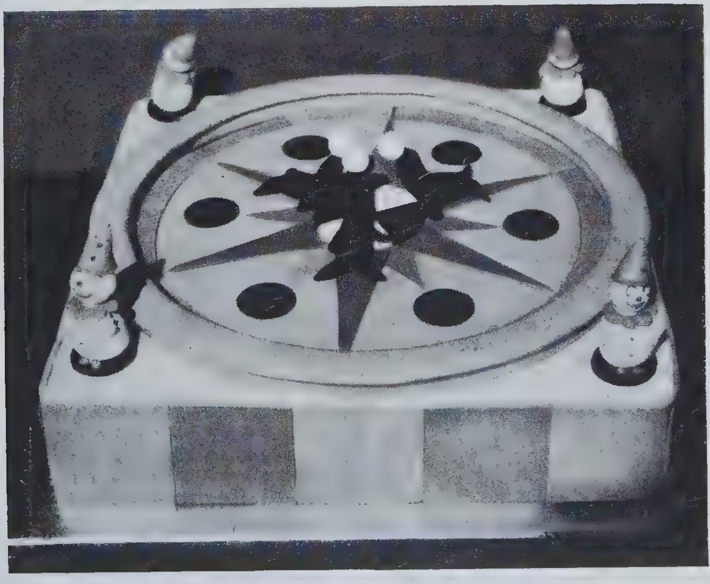


Fig. 28.20

29 Chocolate

The use of chocolate is closely associated with marzipan, yet it is a very good medium used in conjunction with other mediums. There are many types of chocolate couverture, which vary in colour, from very dark, unsweetened, for colouring and flavouring creams or fondant, plain chocolate for coating and piping, to milk chocolate, which is a general purpose chocolate. Most chocolate, in recent years, has been of the milk variety, but now quite a percentage of plain chocolate is called for.

All chocolate takes quite a considerable time to prepare, since it is necessary to temper it before use. This means that the chocolate must be slowly heated and stirred to around 115° (110° for milk chocolate), whereupon it is allowed to cool to the point of setting, then reheated to a temperature of 84° and maintained at that temperature, to give a fluid working consistency.

Preparing chocolate

Various ways of preparation fall into different working categories, although the procedure of preparing is the same. The main difference is between the large and small users. Where large outputs are concerned, the chocolate is bought already kibbled, and all that is required is to empty the contents into a chocolate kettle, which is steam or water jacketed and heated by electricity. The two sets of stirrers are set in motion and the heat is applied. The speed is such that the chocolate is stirred rather than agitated, and the whole mass is gradually brought to a temperature of 115°F. Thereupon the chocolate is allowed to cool to 82°F., still stirring, and then gradually heated to a temperature of 88°F, The reason for continually stirring is to maintain an even distribution of the cocoa butter, for if it separates it is likely to cause bloom on the finished chocolate, though excessive stirring will tend to cause air bubbles to appear on the surface.

Where larger quantities are needed, an enrober is used for doing chocolate coating, and this is so built as to allow the heat to be regulated. Alternatively, where a quantity is being used, the chocolate prepared in the kettle is kept at a slightly higher temperature, then as the chocolate in the enrober is used and cools the addition of some of the warmer chocolate will bring the covering temperatures back to normal. Where we speak of temperature differential, this is only a matter of degrees, it is not meant to create the impression that there are extremes.

TEMPERATURES

For small users, the chocolate can be melted in a double jacketed porringer, or even in a heated or warm cupboard, and left overnight, but then the temperature must be brought up to 115°. To complete the preparation more quickly, pour half the amount on to a marble slab, and work or spread it to and fro with a palette knife or scraper in such a manner as to allow the couverture almost to set, but guard against any crusting; then return the chocolate to the remainder of the heated chocolate and stir gently, and when thoroughly amalgamated test with the thermometer, to read at 86°–88°. If the chocolate is still above this temperature, then the process must be repeated again.

Where enrobers are used, the cooling and dipping of goods are of equal importance, for goods dipped in perfectly made chocolate can lose their final gloss by faulty cooling.

Room temperature is also important, for this should be maintained at around 65°, and free from draughts.

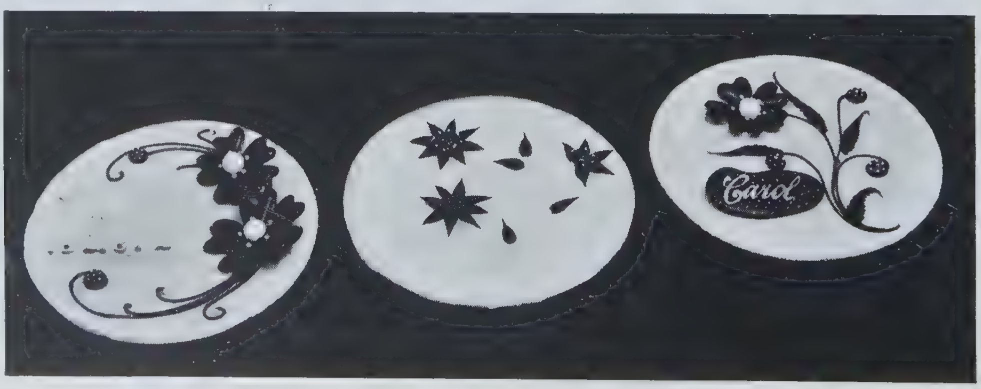


Fig. 29.1 *Chocolate piping on marzipan top plaque:*

(a) Spray formation;

(b) Petals piped singly;

(c) Complete flower with chocolate name plate.

Cold air on a newly dipped product tends to cause discoloration. Seasonal variations of temperature must also be allowed for, but when regular quantities are involved, then some form of air conditioning is desirable.

Bakers' Chocolate

Both for the bakery trade and the small unit, ready prepared chocolate is available, which means that tempering is no longer necessary, and that the working temperature can be raised to between 90°–120° and still dry with a nice glossy surface. Such chocolate is referred to as Bakers' Chocolate, the ideal must be good flavour, smoothness, and consistency.

It is not intended to go too deeply into the technicalities of chocolate, for its use is only considered here as an aid to decoration, and is therefore somewhat limited. Several items, however, cannot but be mentioned, and one of the first is the piping of a flower.

PIPING ON WAX-PAPER

Greaseproof or wax-paper will allow the chocolate to be peeled away easily. Greaseproof gives a matt surface, while the wax helps to transfer some percentage of gloss to the underside. The illustrations will show how the flower is piped in one piece, or petal by petal, and assembled along with a centre when dry. In every instance the outline is piped first, and then could be done over a prepared drawing, but here the actual piping has been done by freehand.

When the outline is semi-set, the centre is flooded, to make quite sure that the chocolate is even and has that smooth, rounded appearance. When dry, the petals are fixed into position, the outer edges raised a little from the base, to give an effective natural look. Stems and leaves may be added at your discretion.

Irregularity in petal formation lends itself to chocolate work, for we think in terms of an alternative decoration rather than actual copying.

30 Christmas Cakes

Christmas, essentially the season of festivity, is one of opportunity in the art of cake decoration, although our present-day methods are very commercialized. The specialist confectioner will display his own products, stamped with his individuality and craftsmanship, while the large establishment or department store can provide much more extensive displays and a greater variety and assortment. The factory turns out Christmas cakes in very large quantities, mainly mass-produced.

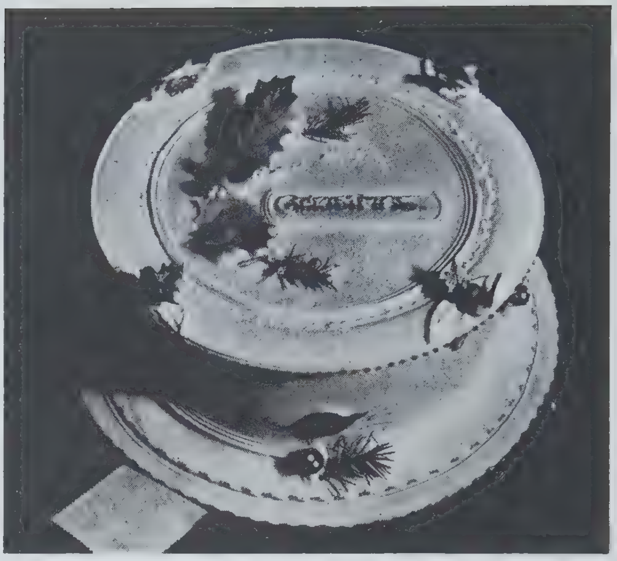


Fig. 30.2 *Exhibition commercial Christmas cake.*

Marketing and display

At one time Christmas was not even thought of before the beginning of November, and this could still be so with the specialist business; but Christmas has now become a major factor in the cake industry and, to some extent, follows the same pattern as other seasonal specialties. One can only conjecture from this the importance of alerting the public to the seasonal items much earlier in the year. Cake manufacturers are therefore beginning to market their products much earlier than they were originally accustomed to do, yet there must still remain a limit to the period between the manufacturer and consumer. At one time quality would have done just this, but today the problem is overcome by the keeping qualities of the cake.

From the shopkeeper's point of view, the cakes are displayed with other seasonal confectionery, which in turn gives the customer a greater opportunity for comparison and creates a sustained interest for a longer period, before selection. Greater discrimination and assessment of value are being shown in all purchases today; sales are cultivated through advertising, and market research estimates the market potential at a given time. To market a product is to provide the customer with what is required, to present it in the correct form, and through the accepted channel: briefly, to have the right product at the right place, at the right time, and the right price.

However, Christmas cakes must fall into two categories, dependent on your own particular type of trade.

The first is the specialist cake, which is usually a top quality cake with a good standard of decoration, produced by the confectioner or smaller concern, where more time is given to decorating according to individual tastes than to creating a typical finish. The second type of cake is that produced by factory methods.

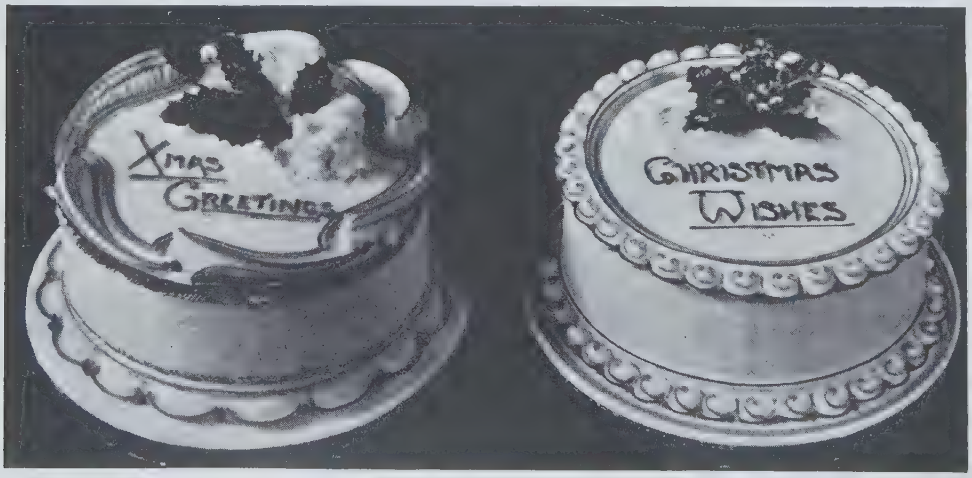


Fig. 30.1 *Two Christmas commercial designs. Student work.*

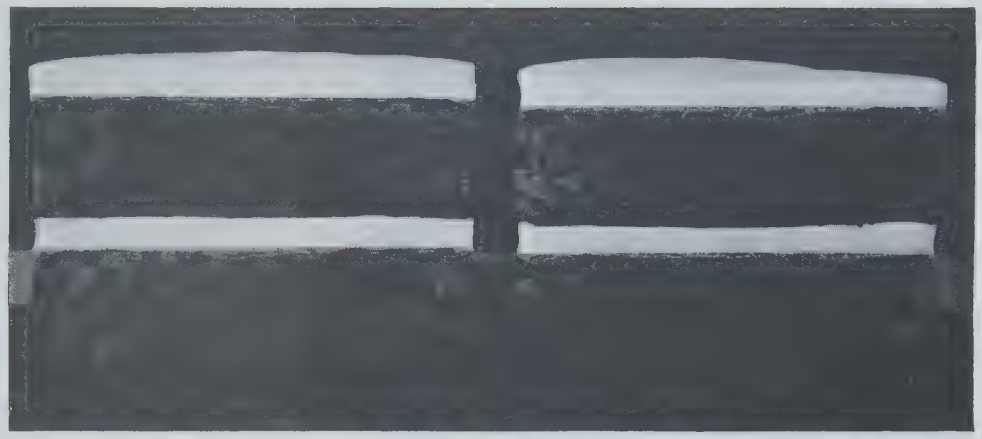


Fig. 30.3 *Christmas cakes, almond iced. Quality No. 1 & 2.*

Whatever your production requires, however, the basic recipe can be made or adjusted to it.

The first recipe is for a rather heavily fruited cake, in which the fruit may be reduced if desired; the second is of medium quality, with a medium fruit content; while the third is a more general purpose recipe. All have very good keeping qualities.

Throughout the year, a good cake could always be produced from the basic pound mix, that is 4 lb. fat, 4 lb. sugar, 4 lb. egg, and 4 lb. flour, with these combined weights, and the fruit content, split into currants, sultanas, and peel. Variations, as preferred, are always made in conjunction with these basic quantities. (See No. 3 below.)

No. 1 Christmas Cake

	lb.	oz.	
Brown sugar	4	0	Blend butter and shortening together until smooth, then 7 mins. medium speed
Butter	2	0	
Shortening	3	0	
Macaroon paste	1	0	
Salt		1½	
Glucose		8	
Pasteurized egg	6	8	Add slowly to the above over 5 mins., beating on medium speed
Liquid milk		12	Break in on slow speed
Caramel		5	
Egg colour (as required)			
Bakers' Grade flour	6	4	Sieve, add to above, clear 1–2 mins. on slow speed
Mixed spice		⅛	
Nutmeg		⅛	
Currants	13	8	Add and clear
Sultanas	13	8	
Peel (Mixed)	5	8	
Minced fresh orange		6	
Minced fresh lemon		3	
Rum		5	

No. 2 Christmas Cake

	lb.	oz.	
Brown sugar	4	0	Blend together, 5 mins. on medium speed
Shortening	4	8	
Macaroon paste		8	
Salt		1½	
Glucose		8	
Pasteurized egg	4	12	Add slowly over 5 mins. medium speed
Liquid milk	2	4	Break in on slow speed
Caramel		5	
Egg colour (as required)			
Bakers' Grade flour	6	4	Sieve, add. Mix 1–2 mins. on slow speed
Baking powder		½	
Mixed spice		⅛	
Nutmeg		⅛	
Essence (as required)			
Currants	10	0	Lightly mix in
Sultanas	10	0	
Peel	3	0	

No. 3 Christmas Cake

	lb.	oz.			
Mixed fats	4	0	Caramel colour		4
Brown sugar	4	0	Essence (orange, lemon)		
Glycerine		4	Currants	7	0
Pasteurized egg	4	0	Sultanas	7	0
Bakers' Grade flour	4	0	Mixed peel	2	0

Almond paste or marzipan should be used to suit your own requirements and cost, but a liberally topped cake would have half the weight of almond paste used for a wedding cake, though this must be left to indi-

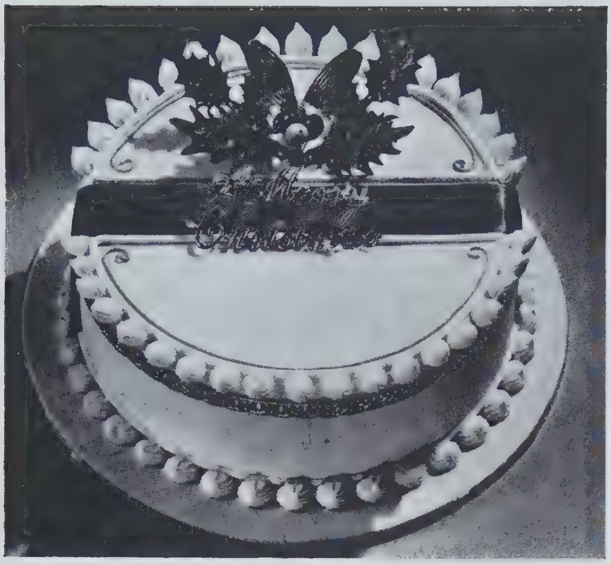


Fig. 30.4 *Student cake. Top division of cake with ribbon.*

vidual discretion. The icing could well be of a softer nature, since the length of time for which this cake is kept, prior to Christmas, will not be so great as for the more commercial type.

Decorations

When the price is maintained above the average, so with the decorative side: a little more time or value may be allocated to the pre-made decorations; there can be a wider selection and more novelty. Individual preferences and customer potential provide the most realistic guide.

Variety will give a good display and look attractive and superior. Moreover, in varying the style, do not underestimate the advantages of a run-out border. You may have opinions as to whether this is commercial or not, but a standard run-out is produced very quickly, and in some ways a lot of unnecessary piping is eliminated.

Standard Sizes

A standard sized Christmas cake is illustrated with the preparation of a cake base, 7 ins. in diameter, weighed in at 2 lb. 2 oz. and topped with good almond paste, to bring the weight to around 3 lb. This gives a finished weight of approximately 4 lb., dependent upon the type of icing decoration; and there is a 9 in. drum board.

The design is now drawn, as shown, based on a 7 in. circle and subdivided into six equal parts, which is the basic theme, and it is intended to show how different variations in design can emerge from the one basic drawing.

The six-sided run-out must first be piped, but remember this is the type of work that can be produced in advance and stored in a dry place until required. If this preliminary is carried out, prefabrication of the finished design is a very speedy operation with some very attractive results. The star centre-piece is also piped as a run-out, to use as a separate decoration, and this shape could be cut from coloured paste and decorated as desired. The inscription plaque is also ready made, in the same manner.

SELECTION OF DESIGNS

In each of the following examples, the base board has been decorated in the same way, simply by covering with royal icing, and sprinkling with a little granulated sugar to give that glistening effect, which if prepared

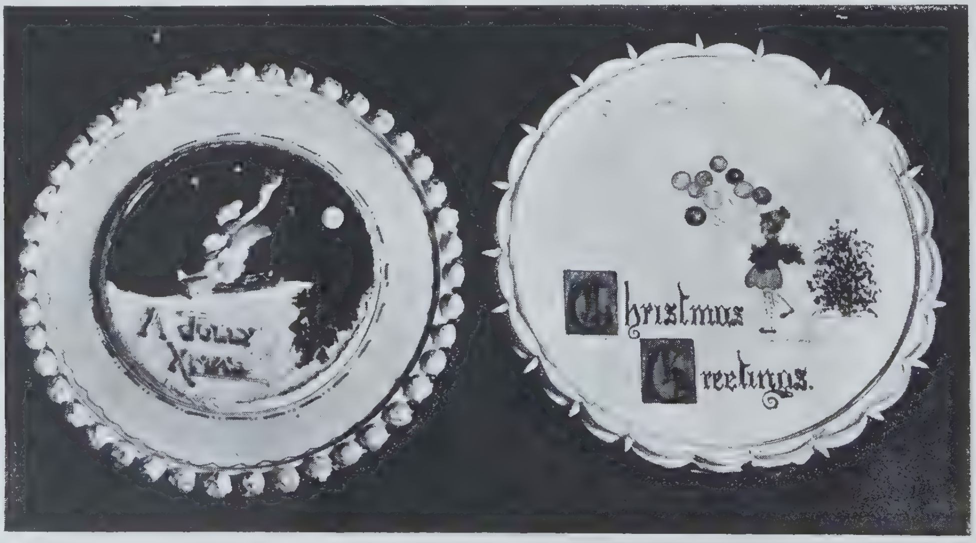


Fig. 30.5 *Plaques. Sledging in chocolate, painted girl with balloons.*

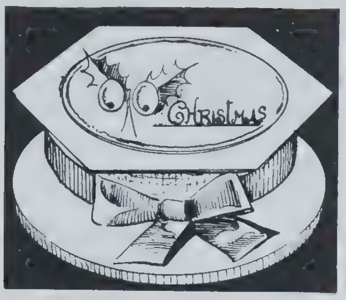


Fig. 30.6.

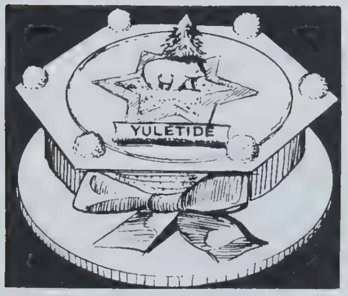


Fig. 30.7.

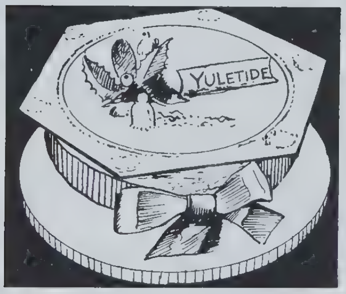


Fig. 30.8.

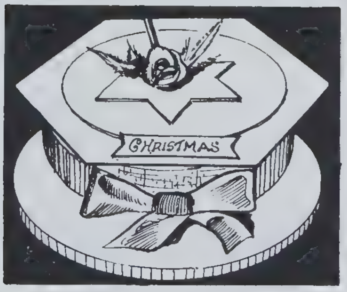


Fig. 30.9.

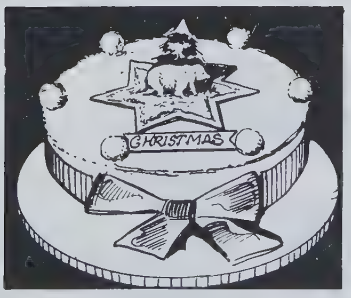


Fig. 30.10.

Fig. 30.6–30.10 *Selection of Christmas cakes (see descriptions in text).*

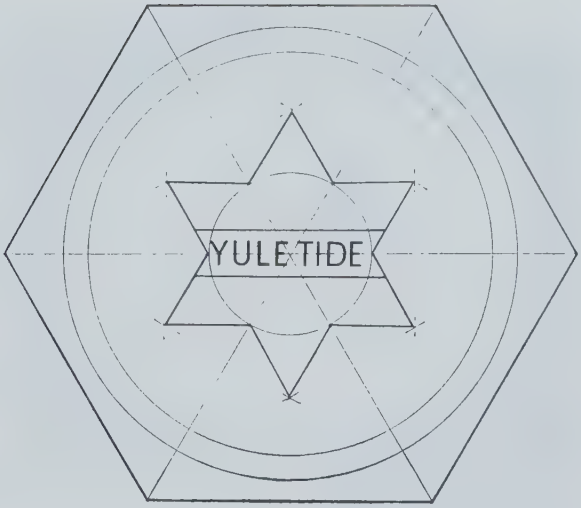


Fig. 30.11 *Drawing for six-sided run-out and star.*

with a little care will eliminate any further piping on this lower border. A length of ribbon of seasonal colour completes the side.

Fig. 30.6: first a little carmine colour is shaded or sprayed into a circle, to the left of the cake centre. A little snow is affixed to the centre and then decorative bells are placed, with backing of holly. The branches and ropes are in chocolate, and 'Christmas' is piped directly on to the cake. A little snow is piped on this edge and each corner of the run-out, to complete.

Fig. 30.7: a very easily decorated cake utilizing the star run-out is completed with the addition of a little snow, a tree, and a plastic bear. A marzipan snowball is placed on each corner of the run-out, and a suitable greeting in red and green will produce a neat and attractively finished cake.

Fig. 30.8 is designed to incorporate a robin spray. Snow is piped and roughened with a brush in a slanting circular fashion, and a combined holly and mistletoe spray affixed. Robins are then positioned at either end of the spray. 'Yuletide' is piped on shaded red and green plaques, and the run-out finished with a little snow on each corner and along the outer edge.

Fig. 30.9: the star design is used to give a modern approach to decoration. Candles are now much more in prominence as a Christmas decoration, and so we fix a red plastic candle-holder with a little snow. By placing it behind a shaded pink marzipan rose with two gold leaves and fern, we obtain a very neat outline. The seasonal greeting is positioned, as shown, and the design completed with a snow effect at the corners of the border.

This will give some idea as to how, from a single design, the variations are brought into being, and all the designs have eliminated piping, with the exception

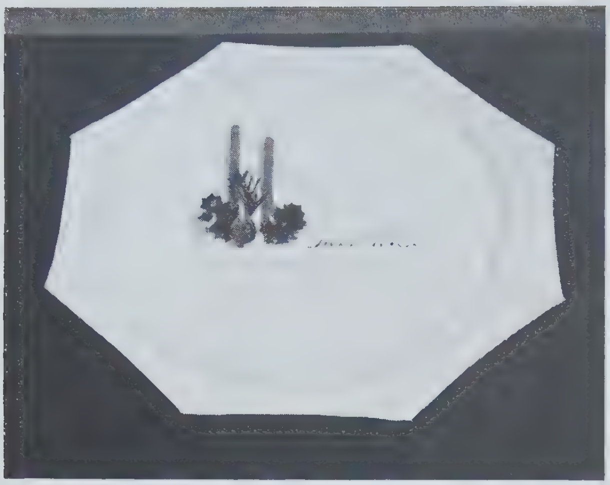


Fig. 30.12 *Christmas plaque, six-sided run-out tinted corners.*

of the inscription. Simplicity and neatness produce something very attractive in a minimum amount of time.

The design may be taken yet a stage further, for those who do not favour the run-out border. The cake may still be divided into six equal divisions, whatever the base colour. The divisions are made by affixing a marzipan snowball at the six points, directly on the top edge of the cake. For the side, run a little sugar round the top edge of the cake, and brush downwards to give a rough, snowy border. One of the previous centre decorations may be incorporated for a quick finish, and the very minimum of piping. (Fig. 30.10.)

Pre-season preparation

Prefabricated motifs with run-out sugar and marzipan are prepared prior to the Christmas season, so that when time is limited the decorations are completed more speedily. The preparation of such items could well be done by the student, which would add to his knowledge and appreciation of the value of this type of decoration.

CUT-OUT MOTIFS

The basic principles will be as before, a simple division of a circle into two parts, providing an eliptical shape and a crescent. Natural coloured marzipan is pinned out thinly, and the various shapes are cut with a pastry cutter or template and then allowed to set or partly dry. This is the first stage in the preparation and if desired could be left as such, until required. The idea is that the paste should be just firm enough to handle, but in no way dry to become unpalatable. If prepared correctly, placing it on the moist sugar will help to soften the marzipan, without destroying the decoration.

In Fig. 30.13 the complete decorations are shown, incorporating a three-piece band, a little snow, holly, and finally the Christmas greeting, also in marzipan. Here is a complete unit to decorate the centre of the cake, and only a neat border remains to be added. The inclusion of novelty figures is always an attraction.

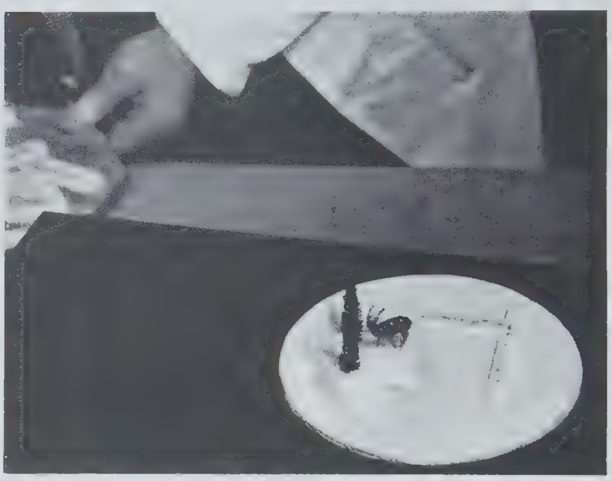


Fig. 30.14 *How to assemble nondescript shapes. Note trees and reindeer and inscription.*

The cut-away crescent section is similarly decorated with ski-ing, and while this provides the top decoration, the holly and inscription are added to the largest space beside the crescent.

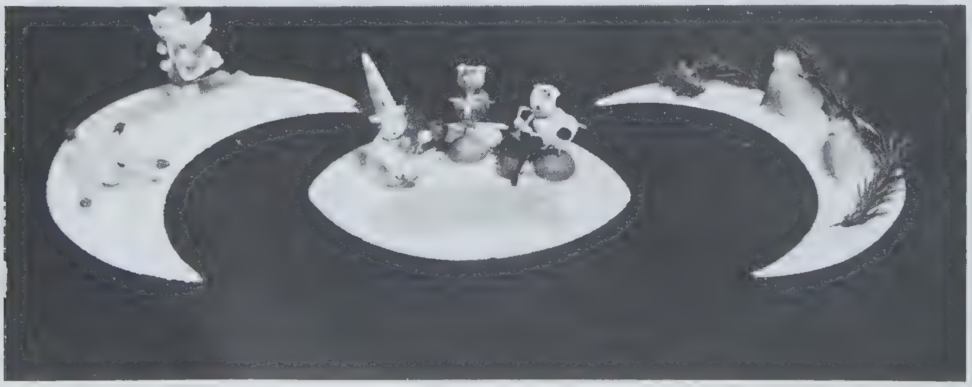


Fig. 30.13 *Examples of Christmas run-out and marzipan cut-outs.*

The same idea is transposed in run-out sugar, and produced in the various stages, as before. By making prefabricated pieces, stage by stage they are produced very quickly, and the amount of time expended is well worth while.

The next run-out is made with fairly thick sugar for it is intended to match the nondescript shape by just running the sugar to its own level in wax-paper. No outline will be needed. Allow the sugar to dry and then it is easily finished in various ways. This particular cake has two trees and a small plastic reindeer. All that is necessary is to add the inscription, which has also been attached to a run-out piece and decorated with miniature sugar holly. Although these two units are shown together, it is intended they should form the basis of individual decorations.

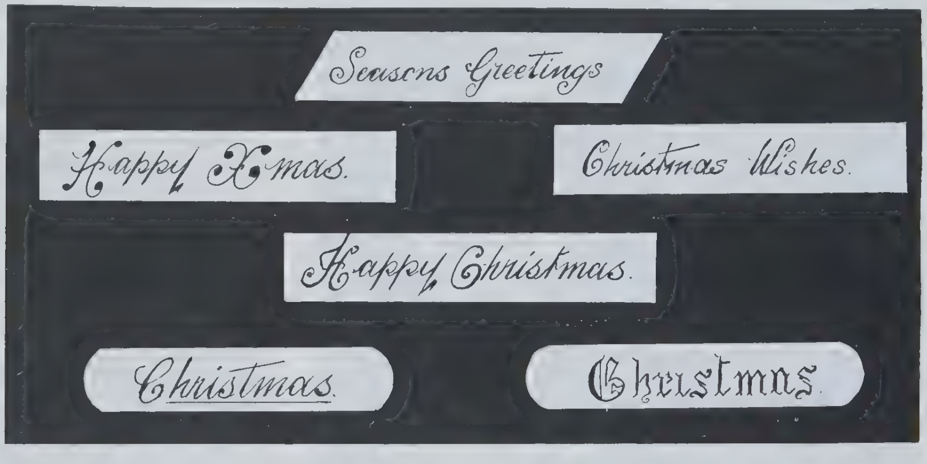


Fig. 30.15 *Marzipan cut-out. Run-outs for inscriptions.*

Inscriptions

Seasonal Christmas inscriptions are also made from marzipan cut-outs; or run-in sugar pieces, ideally suitable and prepared beforehand, will prove good time-savers, yet the attractiveness of the cake is still maintained.

Rock sugar

Rock sugar is used in the decoration of cakes and is very useful in assembling showpieces for it is economical to use, and gives volume without adding weight to the cake. It is not difficult to make, the main point is to ensure a brilliant white rather than a grey mass, and only well-beaten sugar should be used. Various colours can be made by adding the colour to the prepared icing, and different tones of colour are produced by only partially mixing the colour in the sugar. A little blue is necessary to ensure a good white colour.

The method of making is to boil 2 lb. of sugar with $\frac{1}{2}$ pint of water, to a temperature of 280° F. Remove the container from the heat and add a good heaped tablespoon of the beaten royal icing. Stir this into the boiled sugar and continue to stir briskly until the whole of the syrup has been amalgamated, and as the sugar is whisked it will commence to rise, whereupon it is poured into a sieve or wire tray, lined with greaseproof paper. It will continue to rise and in a few moments will set firmly, and is then allowed to cool. When correctly made it has a honeycomb structure, very light and porous and can be broken into suitable pieces for decorating. Rock sugar may be stored in a suitable tin and used as required.

Marzipan borders

These borders have for some time been quite popular and two simple but effective finishes are shown. The marzipan is rolled to approximately $\frac{1}{2}$ in. in thickness and secured to the top edge of the cake. To be sure of an even join, the paste is cut at an angle rather than straight, so that the two pieces readily adhere together, thus avoiding any mishaps. Preferably the surface is allowed to skin before a thin coating of icing is added. This again is allowed to dry before the final coat is roughed or stippled, making sure of complete coverage. Some people, however, prefer to see some of the almond paste through the sugar, then the one stippled coat is sufficient.

Icicles

Another idea with this border is first to coat with sugar and allow to dry; the marzipan should be just on the top edge, yet only sufficient to overhang the side where the first coating is dry; run a little soft sugar over the ring so that it just flows to the base of the ring on the inside and outside. Consistency is most important for the sugar just needs to flow, preferably with a little assistance. The outer edge is then touched with a flat $\frac{1}{2}$ in. paint-brush, and gently dragged downwards to form icicles. Continue this all the way round, then dry off in a warm cupboard. This is a very effective border, but some experience is necessary to be sure that the sugar is just the correct consistency.

Motor-track Border

On a large cake, by keeping the rounded outer edge yet flattening the top, the same sugar coating is given and when dry features a motor-track on the border, while in the centre a small house with trees gives the impression of space – a novel Christmas scene.

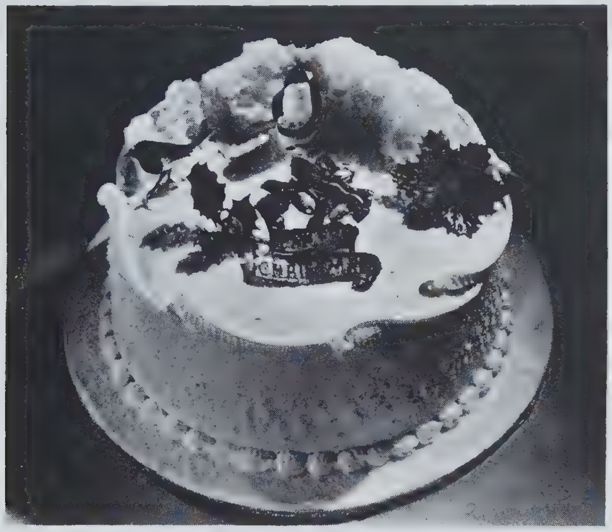


Fig. 30.16 *Christmas cake, showing the use of rock sugar.*

The same border may be treated with chocolate instead of royal icing, and when touched or stippled with sugar a very Christmassy border is produced. One point here: where almond paste rings are used, the weight of the finished cake is affected, therefore due allowance must be made. In past experience a border on this principle was made to fit a 7 in. cake. The paste was weighed and moulded round a block of wood to obtain a perfect circle, and these rings were allowed to dry. They were then placed on wax-paper and covered with chocolate, which finished the ring so that it could be lifted and secured to the cake. The gap between the border and the cake was then filled with sugar and roughed, leaving the centre clear for a suitable holly decoration and inscription. A little improvisation transfers what seems to be an impossibility into a reasonable commercial proposition.

A ring border, well executed, will always look distinctive against the normal commercial piped border, providing it is not too heavy.

This same type of border may be done with royal icing and provides a reasonably quick finish, or the basis for light piping loops, etc. In preparing for such a finish, when the cake is finally coated it is advisable to take off the edge of the border, with the knife at an angle of 45°; the take-off only needs to be $\frac{1}{8}$ in.–$\frac{1}{4}$ in., and when dry will allow the piping to hold its correct position. When a number of cakes are to be piped, this will call for the use of a savoy bag and tube of $\frac{1}{4}$–$\frac{3}{8}$ in.; the size of cake will determine this, yet where a cake of 8 or 9 ins. in diameter is required, then the savoy tubes can be $\frac{1}{2}$ in. in diameter.

Sugar for this piping should be not too well beaten, or allowed to rest overnight, and dry sugar can be added to give the consistency. Only sufficient sugar should be placed in the savoy bag to enable you to press with ease, for once the piping is commenced, the line must be continuous. A good idea here is to place the finger over the aperture of the tube and press hard before commencing to pipe, for this will eliminate any

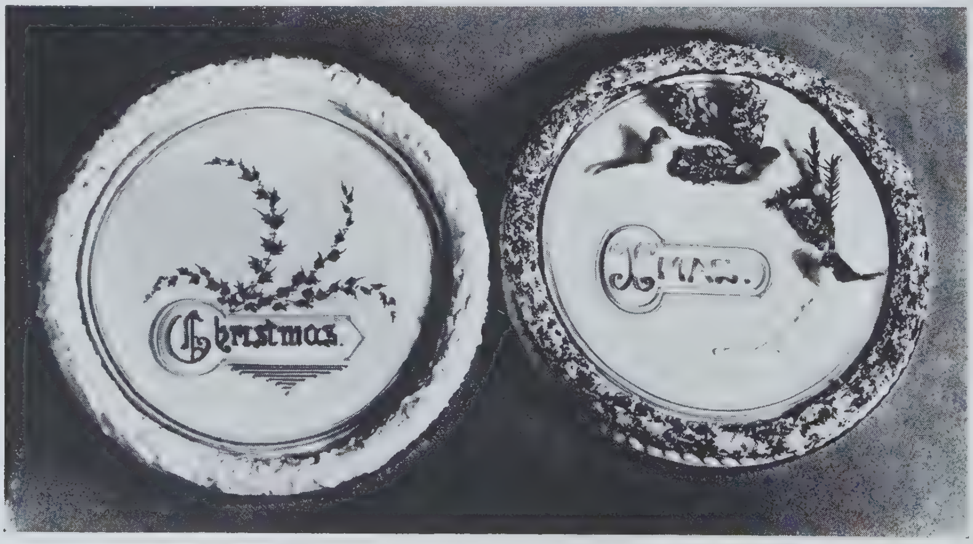


Fig. 30.17 *Christmas plaques. Decorated ring in marzipan, chocolate and sugar.*

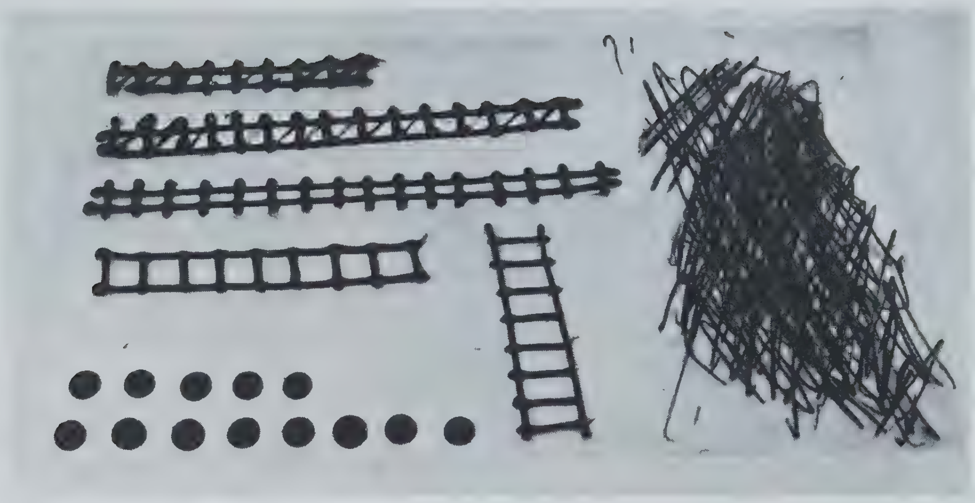


Fig. 30.18 *Railings, ladders, spun chocolate and chocolate drops.*

air bubbles and so enable the flow of sugar to be more continuous when piped on the cake. Smoothness is essential, and the right pressure should be applied as the turntable revolves. The join of the ring is then smoothed down with a soft paint-brush, the flat oil type; $\frac{1}{4}$ in. across is most suitable, and it should be slightly damped as a little moisture is beneficial in acquiring that smooth finish.

A simple finish, particularly if the base board is covered with sugar, is to sprinkle castor or granulated sugar at the same time over the piped ring, then the surplus will fall on the base board to give a glitter effect. If piped in white against a pale pink, yellow, or orange base it will give a very effective finish without further piping. The more efficient the piping, the greater the effect will be. If, however, it is intended to pipe on the ring, the sprinkling of sugar should be omitted.

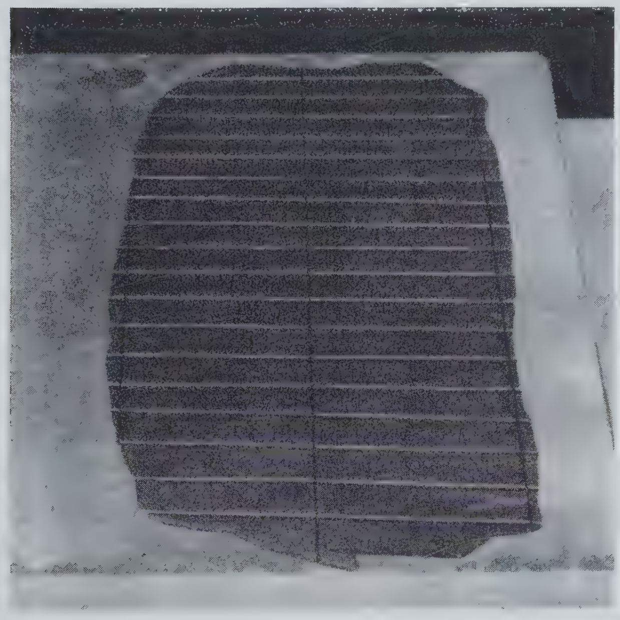


Fig. 30.19 *Chocolate name-plates on polished metal surface.*

USE OF CHOCOLATE

For inclusion in this type of design are chocolate railings, ladders and chocolate spun on to greaseproof paper; this is removed when set and used as twigs, ideal with robins or at the base of Christmas trees. Chocolate drops also have many uses.

Similarly, chocolate name-plates are made by running conditioned chocolate on to a polished metal surface and when nearly set, scored through, using a ruler and knife to cut into the required sizes. When set, the pieces will contract and are easily removed, and the shining surface enables the inscription to be piped on smoothly. This surface is very suitable for writing, and even the use of a paper bag without a tube will move along the surface quite freely.

31 Commercial Production

THE individual or specialist cakes, as we have mentioned, are made to suit a particular requirement, and in conjunction with the price, the quality or standard is set. Our attention is now focused on the Christmas cake that is produced in large quantities, with the aid of some mechanization.

From the outset we approach this subject in an entirely different manner, for a cake must be produced to be sold, not necessarily through a retail establishment, at a very competitive price and during a season which is not just the brief Christmas season. This means that the cakes are produced much earlier, and to be sure that they are in good condition at Christmas, certain modifications or adjustments should be made.

Type of cake

Firstly, the recipe must be so constructed that the moisture and fruitiness are retained for a much longer period, which is not always the case with a good rich fruit cake, but price is a consistent factor, and to be competitive will probably mean some reduction in the quality of the cake. Incorporation of invert sugar and moistening agents is one way, and I suggest it would be better than attempting to lower the quality to any great extent. Great care with baking should also be given fullest attention, for there is nothing that dries the cake more than over baking. A little more care in this direction will amply repay you.

The same thought has been given to the manufacture of almond paste, for some pastes, when kept any length of time, had a tendency to dry on the outer surface and show signs of crystallization within the paste itself. This was detrimental to cake produced for such markets, but more recently the manufacturers, aware of this, have made great strides in perfecting a paste that will keep in condition for a very long time. Consistency has also been of greater importance and the pastes have now been adjusted to enable them to be rolled out mechanically.

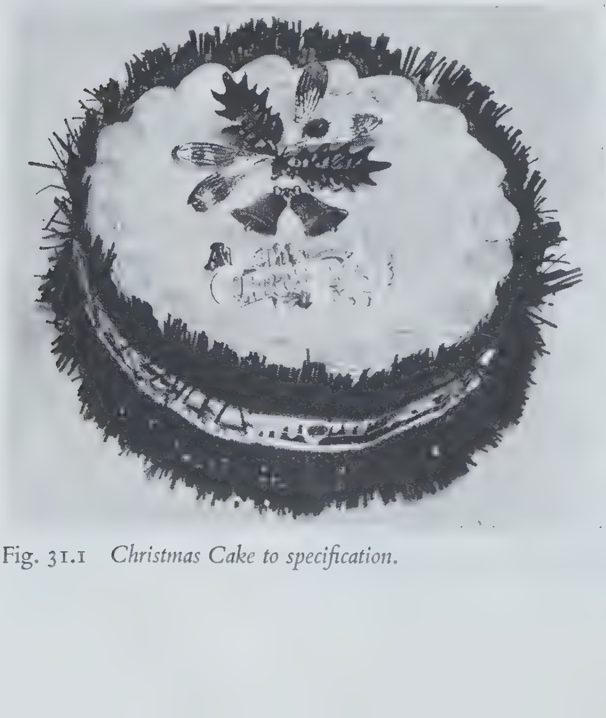


Fig. 31.1 *Christmas Cake to specification.*

STANDARDS AND SIZES

Throughout production on a large scale, it is essential that some kind of standardization be adopted; the essence of mass production is to ensure that everything is to a standard, and that the same identical product results. A good deal of planning is therefore necessary to enable every item, every operation, to be registered and maintained in the form of a standard.

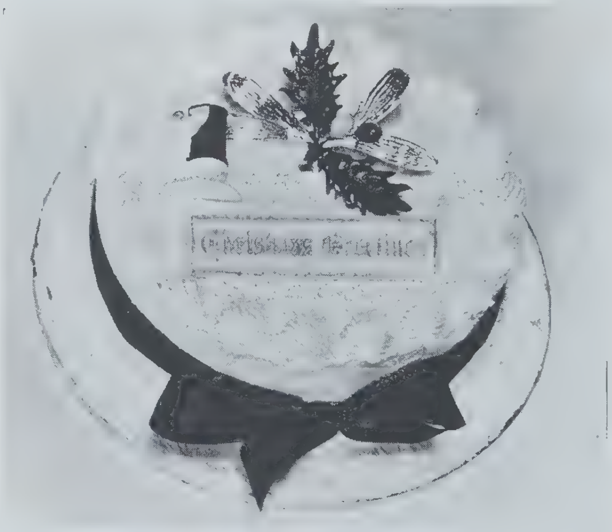


Fig. 31.2 *Fully coated cake 2½lb.*

Christmas cakes required for this sort of outlet fall into two categories: a fully iced cake, and a cake iced and decorated on top only, with a coloured frill round the sides. So these are the first considerations, the type of cake, its size and the price. In order to maintain a good production run the sizes should be kept to a minimum, and where a cake is iced on top for one size then try to use the same base for a fully coated cake. This in itself will give a standard cake of two sizes and two price ranges: ideal, but it must be considered in the light of what is required.

Oven Capacity

Oven capacity should be related to machine mixings. The size of mix will be sufficient to fill one, two, or three ovens. Adequate cooling facilities will be needed, and storage overnight, prior to a continuation of cake process. With bulk quantities you will appreciate that the cake must continue through its various stages, and the cooling is just the intermediate stage between baking and icing. The storage or wrapping of cakes for a future date is thus eliminated.

HOOPS AND LINERS

Following the principles suggested, the first item to determine is the size of hoop, and while examples are given, there is no reason why these should not be adapted to your own requirements. Some prefer a deeper cake, some prefer a shallow type, and these are the points you must decide for yourself. Having decided on size, each item should now be given a weight allowance, to bring it to a final conclusion, and each specific weight registered on a standard specification.

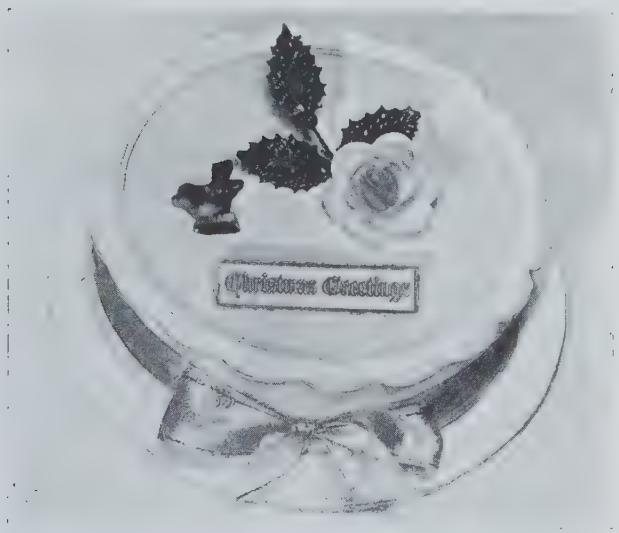


Fig. 31.3 3¾*lb. coated to specification.*

Each hoop is lined with kraft liners, inside which is placed a greaseproof liner and at the base a greaseproof circle.

		G.P. liners ins.	Kraft liners ins.
6 in. hoop	6 in. circle	19 × 1¾	19 × 1¾
7 in. hoop	7 in. circle	22 × 1¾	22 × 1¾
8 in. hoop	8 in. circle	25 × 1¾	25 × 1¾

The depth of the liners is sufficient to cover the sides only, not to come above the top edge of the cake, for with the top-decorated cake it is policy to leave the greaseproof liners and circle attached to the cake to ensure that it keeps in good condition. The cake is totally enclosed or sealed in the same way as with sugar coating.

Once these sizes are determined, they are bought from the manufacturer ready cut, which is a great saving of time and labour for small extra cost. In this way you always have a good, clean cut edge, always the same measurements, which in turn give a better shaped cake when baked, and a good square side on which the almond paste is easily squared to give a level top and straight sides when finished. Some prefer to use a paper cup, but experience proves this has a tendency to pull in when baked, and the cake shows a tapering side which, as the further stages are added, is emphasized even more. The three sizes recommended above will be processed throughout the various stages and these will now become our standards.

CAKE WEIGHTS AND NUMBERS

After lining the hoops the next item to consider is the oven and cake weight.

Hoop size ins.	no. per tray	trays per oven	wt. of cake lb.	oz.	baked weight lb.	oz.	oven outturn
6	12	16	1	8	1	6	192
7	8	16	2	3	2	0	128
8	6	16	3	0	2	13	96

The above is based on a drawplate oven 12 × 8 ft. and a tray size of 26 × 18 ins. which is the standard used throughout, and each oven will hold 16 trays per baking.

A cake with a baked weight of 1 lb. 6 oz. will therefore take 7 or 8 oz. of almond icing and 2 to 3 oz. of sugar coating to give a complete cake, with a finished

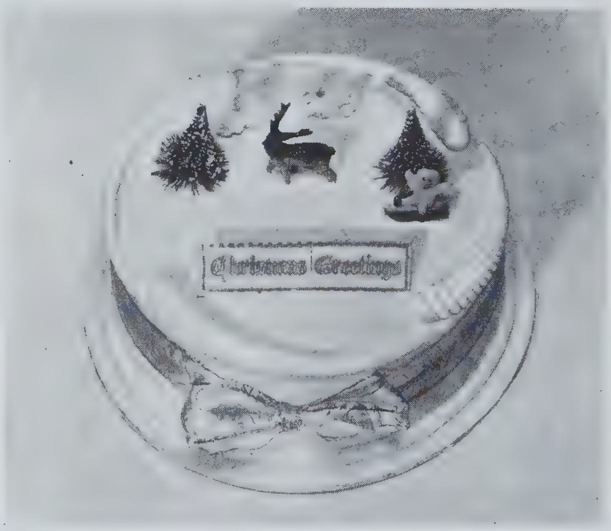


Fig. 31.4 *5lb. coated to specification.*

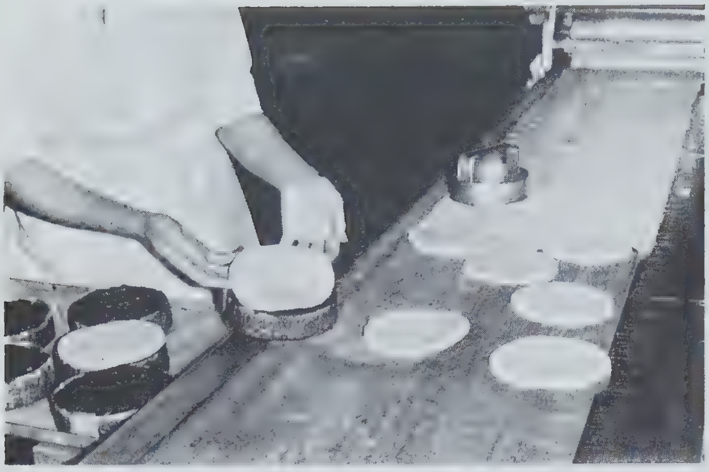


Fig. 31.5 *Cutting paste and plaques for the cake from sheeter.*

weight of 2 lb. The decorations and frill, not being included, although light in weight will help to maintain the finished weight and arrive at the standard, and should be registered in the same way as baking.

Wt. of cake lb.	oz.	wt. of almond paste lb.	oz.	wt. of sugar oz.	finished weight lb.
1	6		8	2	2
2	0		13	3	3
2	13	1	0	3	4

Sugar is just sufficient to give a coating and stippled with a piped star border. Any alternative must be given due allowance. So, too, the artificial decorations, these must be set down and positioned on the sample cake as follows:

Finished weight lb.	type of decoration	figure	motto
2	holly spray	twin bells	Merry Xmas
3	roses	Santa Claus	Greetings
4	rose and holly	robin	Christmas Wishes

Fully iced cakes

So far the cake iced on top only has been considered, but in the light of the information given, the fully iced cake will be determined. Slight alterations to the specifications are necessary.

Wt. of cake lb.	oz.	wt. of paste oz.	wt. of sugar oz.	size of board ins.	wt. of board oz.	finished weight lb.	oz.
1	6	8	8	8	2	2	8
2	0	13	13	9	2	3	12
2	12	16	16	0	4	5	0

Boards

The most suitable type of board is known as 'double thick' which is quite firm and travels reasonably well. The drum board is omitted at this stage, for not only does its weight affect the cake size, but packaging also. The 5 lb. finished cake if placed on a drum board would be 5⅛ lb. complete, and if the weight is subtracted from the initial weight, it throws the whole concept out of balance. Anything over the 5 lb. weight should be considered in this light, for the adjustments are then more easily controlled. The decorations are now listed under separate headings, so the operator or foreman will know exactly what is required.

Finished weight lb.	size of board ins.	decoration	figure	insc. motto	ribbon 1 in. wide
2½	8	holly spray	post box snowboy	Merry Xmas	red
3¾	9	roses holly	robin	Xmas plaque	green
5	0	Christmas trees	reindeer snowboy	Xmas plaque	pink

ALMOND ICING

Every item connected with the baking stage has now been specified and so some consideration and thought

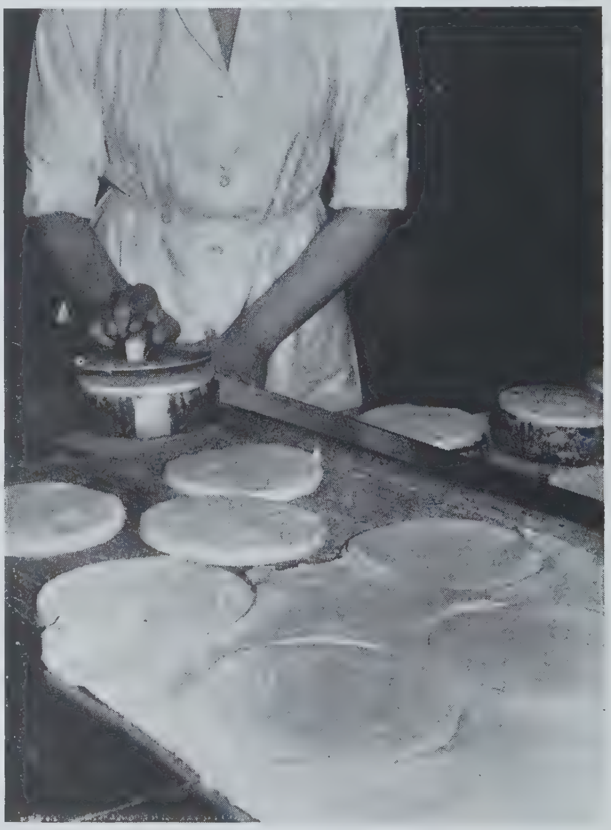


Fig. 31.6 *Securing the top with a piece of wood.*

must be given to the processing. Having produced the baked cakes as directed, the first thing that comes to mind is the almond icing. Many varieties are on the market, and samples should be examined before selection. The type will be influenced by the price you wish to pay, in comparison with the price at which you wish to sell. If a cake is advertised or listed with almond icing or marzipan, then it should be remembered that the standard laid down is a minimum content of 25% dry almond, therefore a content of 27%–30% should be used to keep within the standards.

Use of Sheeter

Almond icing for mass production is processed through a sheeter, which enables the paste to be rolled to whatever thickness you require. It is advisable to notify the manufacturers of this when selecting a suitable paste. The thickness of paste is cut out with a special cutter, made to the exact measurements of the top of the cake base, and the weight of paste cut with the appropriate cutter will determine the thickness. Once the machine has been set for a given size, by marking the indicator the same procedure is quickly repeated on future days.

The paste is sheeted on to a moving polyvinyl coated web and the circular tops are cut by hand. The cake is brushed on top with a neutral jelly or similar adhesive, and the cut circle of paste is placed on top. The surface is then levelled by pressing or smoothing with a circular piece of wood: a very quick operation, for the cake is level in the first instance, so it is just a matter of making the paste adhere to it. This method gives an even pressure and does not push the sides out of shape. The use of a scraper to square the sides is eliminated.

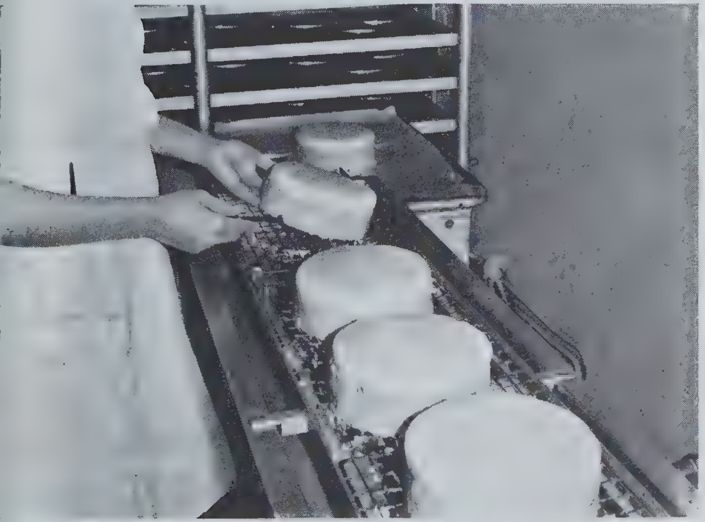


Fig. 31.7 *Removing Christmas cakes from dipping wires to silver board.*

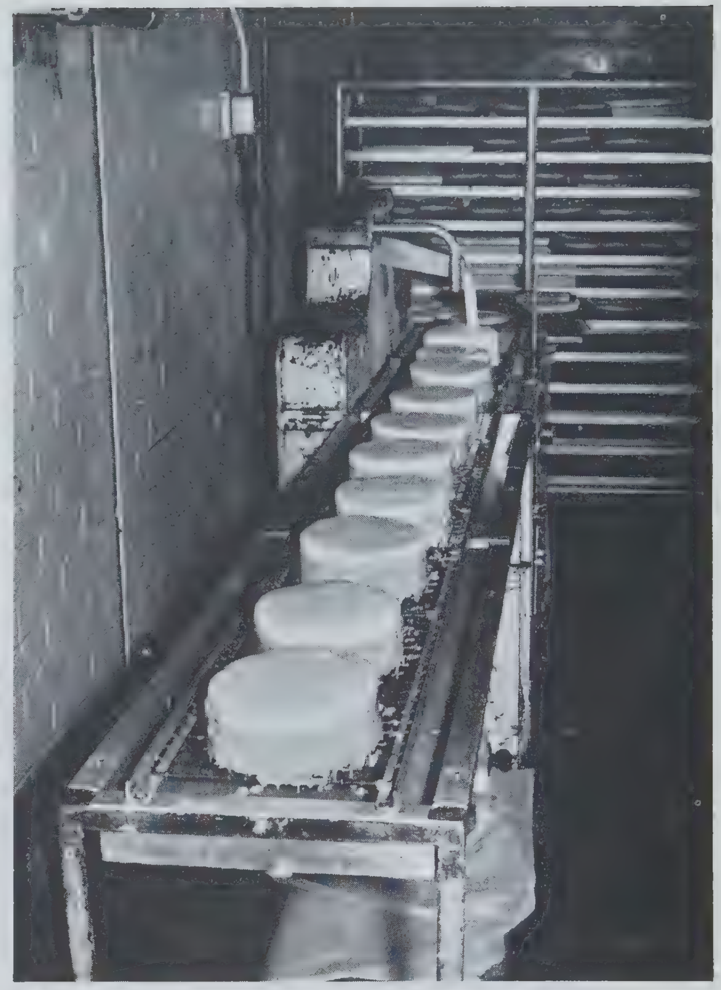


Fig. 31.8 *Passing cakes through the enrober, first coating.*

The cakes, completed, are placed in suitable racks for the icing stage.

Icing

Various types of icing are used, but the weights given on the specification sheet are of royal icing with an addition, such as glycerine or fondant, to prevent the sugar drying out. The sugar should be well beaten, unless a soft coating is to be given.

Use of Moving Web

The icing and decoration of a cake is also processed on a moving web, on each side of which sufficient room is left for a turntable. This simple procedure allows an operator to ice the top of the cake, which then travels along a web to the next operator, who will pipe the border. The decorations are added while on the moving web, after which the cakes are racked, to enable the sugar to skin over or set. These are the basic principles involved in the decoration of a cake on the top, but a good deal of thought must be given to setting up an operation like this which is to have continuity.

STAGES IN COATING CAKE

Where the cake is to be fully coated, similar principles are involved. Firstly the cake must have the liners removed, prior to the almond icing, which is done in exactly the same way as with all coated cakes. It is advisable to give more than one coat, and in order to speed up this operation, the cake is placed on a wire and passed through an enrober, and given a coating of warm fondant; the consistency should be such that when the surplus is removed from the top by a palette knife, it will run down the sides and so coat the cake. You need sufficient to cover the cake and to set, otherwise this will interfere with the second coat. Remove and place on a silver board.

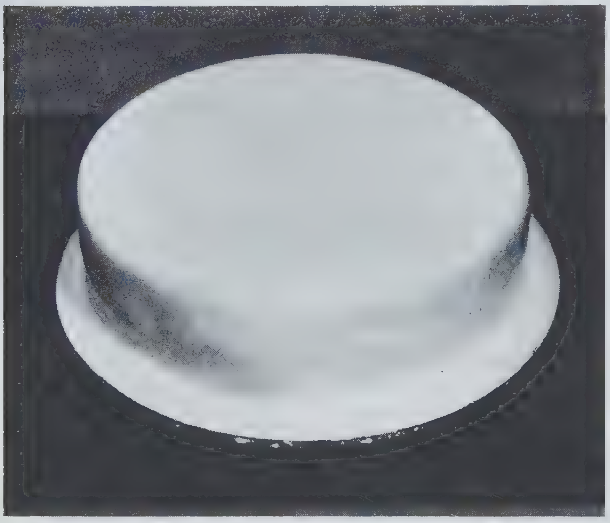


Fig. 31.9 *Fondant coated cake prepared for icing.*

When set, these cakes are transferred to the decorating web. In the first stage, the correct amount of sugar is weighed on to the cake top and the second operator will then coat the top and sides, the next operator will prepare the base board and the side of the cake, if to be marked with a comb scraper on base board. The next operator will pipe the border and add the decorations as the cake moves forward. They must be allowed to dry before the ribbon is put on or packaging is commenced.

FONDANT

Various other types of icing are ideal for the coating of cakes, and probably the most popular is fondant, for it provides a nice soft-eating icing and is quickly manipulated, especially where a cake can be enrobed. One disadvantage is that, over a period, it tends to dry out, and the addition of 1 oz. to 2 oz. of marshmallow to each 1 lb. will help in maintaining the soft nature of the coating. For local confectioners it is an advantage, particularly where shelf life is not quite so important.

FUDGE ICING

The fudge type of icing, produced from icing sugar and fondant with the addition of fat and milk powder, can be used cold for the tops and then gently heated to 110° but not beaten, and poured over the cake to give a smooth coating. The icing, so made, keeps very soft and virtually skins over with a firm crust. Similar variations of these icings can be made, but where larger production and shelf life is necessary, they do not readily lend themselves. The question of wrapping must also be considered, together with packaging and transport.

Artificial decorations

The making of artificial decorations has become a very specialized industry, and although the number of firms handling this material has lessened, the remainder manufacture on a considerably larger scale, which allows for a comprehensive range and the possibility of producing something original and including individual preferences.

Where large quantities of iced cakes are to be produced, the advantage in using one of the main decora-

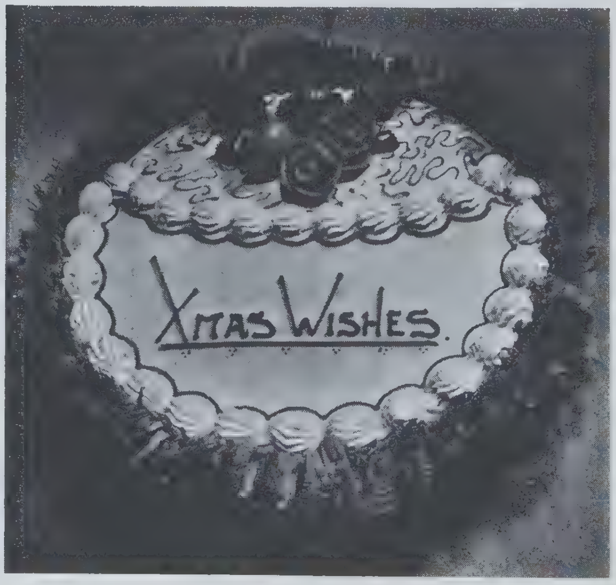


Fig. 31.10 *Christmas cake.*

tive houses is that quite often a spray or even the whole artificial decoration can be made to your own specification. This must be interpreted from a cost point of view, the assembly of different types of decorative materials can give a cost improvement if designed in conjunction with the manufacturers. Where different sizes of cakes are made, this is even more necessary, for an individual decoration gives the cake its quality of finish in comparison with its price. I have always been a firm believer in originality and individuality, and have maintained that if your decorations are made in this manner, you place on the market your own standard, and in time this becomes accepted and known. The assembly of sprays so easily helps in this direction, but where a figure is concerned, this presents a slightly different problem and a certain amount of repetition is bound to be involved.

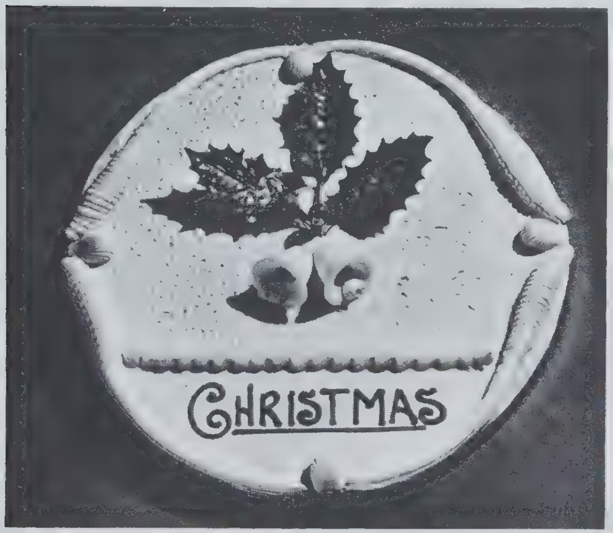


Fig. 31.11 *Alternative styles.*

SIZE OF FRILL

Where a cake has on its specification a decorative frill, the same thought must be given, for there are an immense variety and all kinds of prices and standards but the one preferred is that which has a cellophane covering over the outside. This gives a certain amount of glossiness and looks very attractive. The seasonal printed decorative material within the cellophane is just a matter of choice, but some are of exceptionally good colouring and design. For our frilled cakes, with the sizes previously determined, we now decide the length of frill, sufficient to go round each cake, allowing for an overlap of $\frac{1}{4}$ to $\frac{1}{2}$ in. Some idea will be as follows:

6-in. hoop will require a 19-in. frill
7-in. hoop will require a 22-in. frill
8-in. hoop will require a 28-in. frill

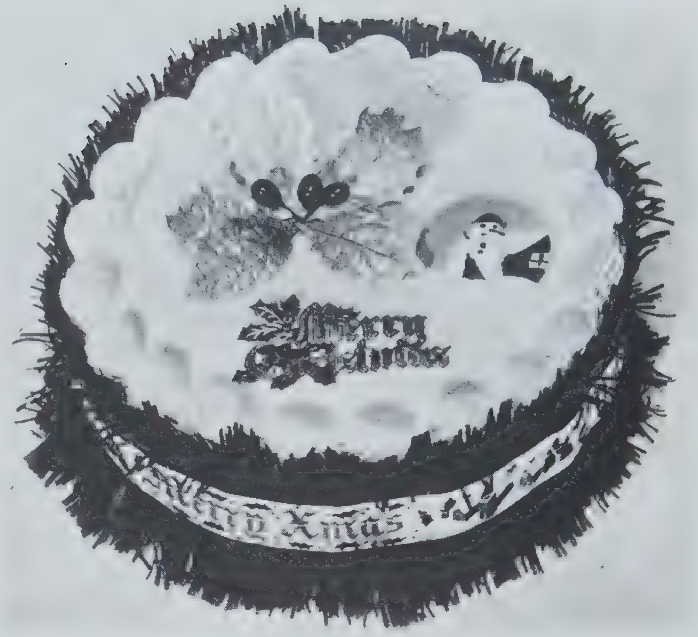


Fig. 31.12 *Completed cake.*

The manufacturer is given these details and he in turn will cut the frill to the length required, so that all the operator has to do is just join the frill with an automatically dispensed piece of cellotape. It should be understood that this method is for large quantities, and such aid will only be given provided the quantity bought is sufficient.

Artificial Sprays

Sprays, for instance, are usually tied together in sixes with thin wire. Imagine the damage that could arise when cutting or undoing is undertaken near the production line, quite apart from waste of the operator's time. Long stems on the sprays will have to be shortened prior to placing on the cake, so when making sprays in quantities, remember to have short stems and packed singly in the cartons, and if delivered in large quantities, five or ten gross instead of one or three. Some improvement in cost could be made here. Similarly, the frill, imagine how long an operator would spend cutting parts to a set length, and that is not an easy task. All decorations then, should be purchased ready prepared. to place in position on the cake.

32 *Packaging of Cakes*

THE packaging of all cakes – celebration, Christmas or otherwise – is today more important than ever before. How the product is to be presented to the customer and how it is to arrive at its destination is a question to which we must give continual thought. With the large cakes, wedding etc., transportation is usually provided, and by packing into specially made boxes the cake has a fair chance of arriving safely. But the individual cake, the smaller birthday or Christmas cake, is quite a different matter, for we usually rely upon the customer to collect, so it must be suitably packed, and not too heavy or bulky, in a selected box or container, thereby presenting the cake to the best advantage.

Cellophane wrappings

Having now produced the cake, the first stage is to wrap the product in cellophane, and a suitable cellophane for this purpose must be selected. The wrapping of cakes in this way, particularly those that are to maintain their shelf life over a longer period, should be effected as soon as the finished cake is set.

Briefly cellophane is divided into three types which can vary in thickness, 300, 400, and 600 gauge, and eventually have some effect on the keeping qualities, but the 300 should be suitable for most purposes. The first is known as Q.SAT, and while this cellophane protects the cake, it allows the cake to breathe, so that surplus moisture does not affect the product within. It is heat sealing and is ideal for machine wrapping, and is accepted generally for machine wrapped iced cakes.

Secondly we have M.SAT which presents a more complete barrier to the atmosphere and therefore the moisture within the pack, to some extent, must be contained by the product itself. Where an iced cake is concerned, in time a certain amount of condensation occurs and this will cause a slight discoloration of the icing, a softening of the sugar, and sometimes a mistiness or bloom on the cellophane, and so the pack will not be so clean. This type of cellophane is therefore more useful in the wrapping of fruit cake, Dundee cake, or slab, where the excess moisture can be absorbed by the cake itself.

A complete barrier is obtained with the use of MXXT, and while this may be beneficial to some extent with fruit cake, it has limitations with general confectionery products.

Where the fully coated cake is to be wrapped, very little mechanization is available and the problem here is sealing. For this purpose we have what is known as a P.T. cellophane, which is not heat sealing; this has a high moisture permeability, which enables the cake to breathe, allows the cellophane to remain perfectly

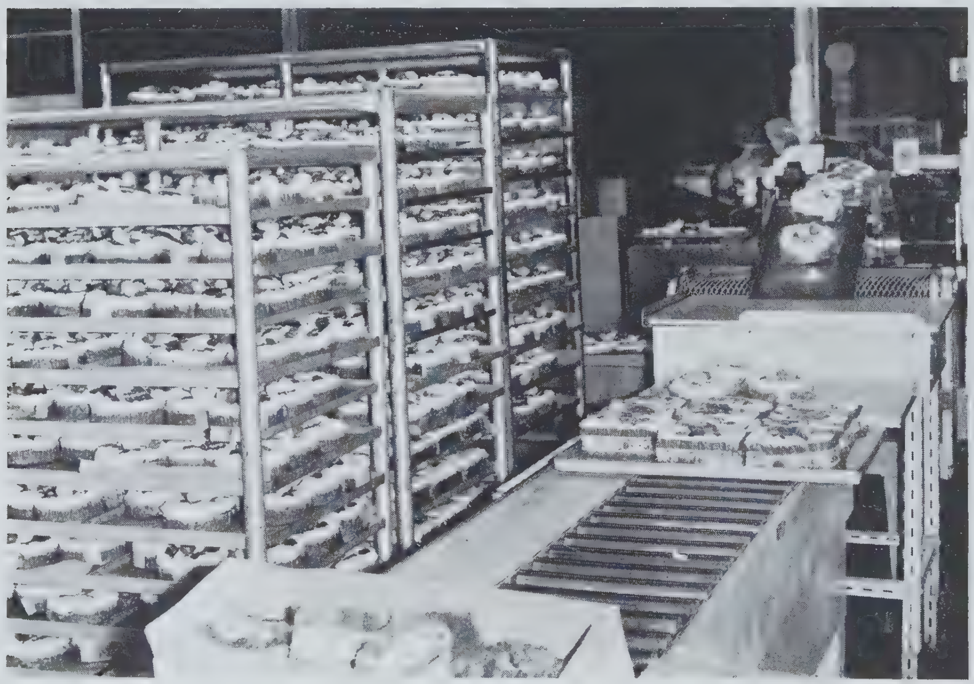


Fig. 32.1 *Cakes assembled for wrapping.*

clear, and the cake is given ample protection. Standard sizes should be obtained to avoid unnecessary cutting.

Wrapping methods

The cellophane is placed over the fully iced cake and carefully wrapped on the underside, by folds around the side. The cellophane is then secured on the underside with cellulose adhesive tape. Some indication of the size required is as follows: the 2½-lb. cake on an 8-in. board will require a cut piece of cellophane 20 × 16 ins.; and the next size, 3¾ lb. on an 8- or 9-in. board, will require a piece 22 × 18 ins. Your own particular size should be first determined and such procedure should only be exercised where quantity production is to be considered.

Various firms have their own way of marking and naming these cellophanes, so in this respect it is well to seek the advice of your suppliers to ensure that the right type of cellophane is bought.

Wrapping Machines

The wrapping of cake by machine is limited to three types of machine. The direct wrap of the B.W.6 is perhaps the most versatile, for it can be easily adjusted to a particular size or line and can be called upon at any time to give a particular wrap. The cellophane is used in reel form and the paper fed over rollers, to give the required slackness, so that the cake itself moves into the cellophane; during the lifting operation the cellophane is cut in such a way as to allow the end to be folded underneath; and as it passes through the heat sealing section the basic folded sides are sealed. One disadvantage of this machine is that it gives a square wrap, but in view of the fact that it is so easily changed from one product to another, one is prepared to accept this as a general purpose machine, with a wrapping speed of 30 to 35 per minute.

The Hayseen gives a good wrap on a somewhat different principle, in as much as the length of cellophane is cut and passed over the top of the cake, and then folded on the underneath side prior to heat sealing. The difficulty with this machine is that the cakes are not conveniently interchangeable, but if it is set to do one specific line, then a perfect wrap is maintained. The wrapping speed is up to 35 per minute.

The third method is a pleated wrap, which is possible when the cake is not supported by a board. One point is, the decorations should be uniform and flat on the cake to enable the cellophane to be tightly pleated around the sides.

FRILLING THE CAKE

In every instance the cake is frilled after it is wrapped, for one reason alone, and that is if the cake is frilled before wrapping, as it proceeds through the machine the cellophane pulls or drags the frilled edges down the side, and the result is an uneven top edge, which looks most untidy when completed. It is a reasonably easy matter to take off the cellophane when placing the cake on the table, and to return the coloured frill.

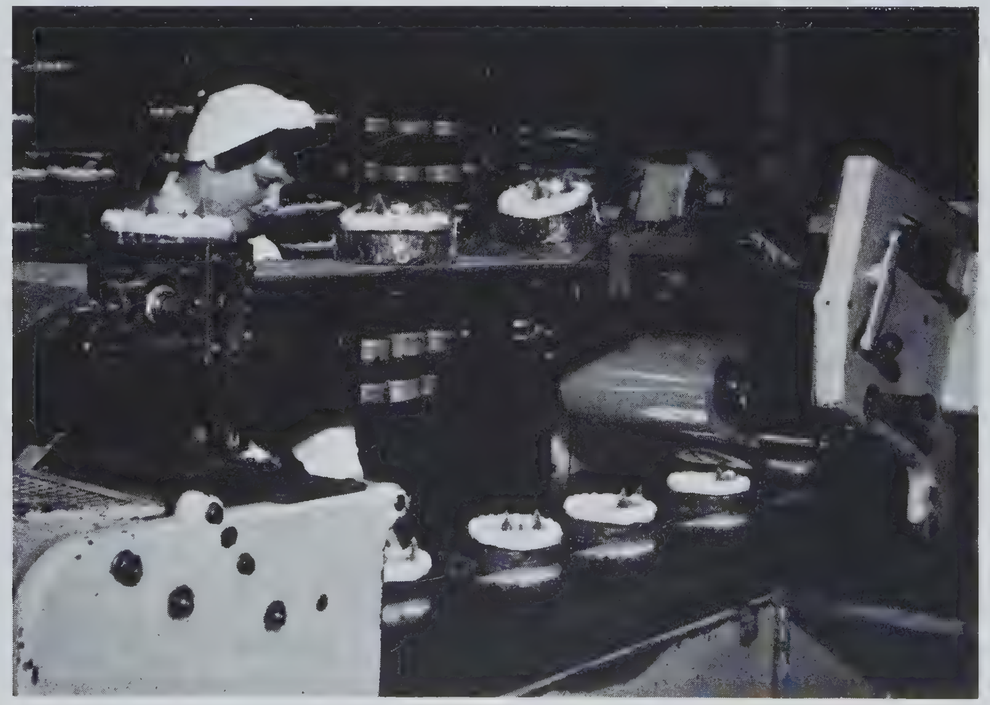


Fig. 32.2 *Feeding cakes into machine.*

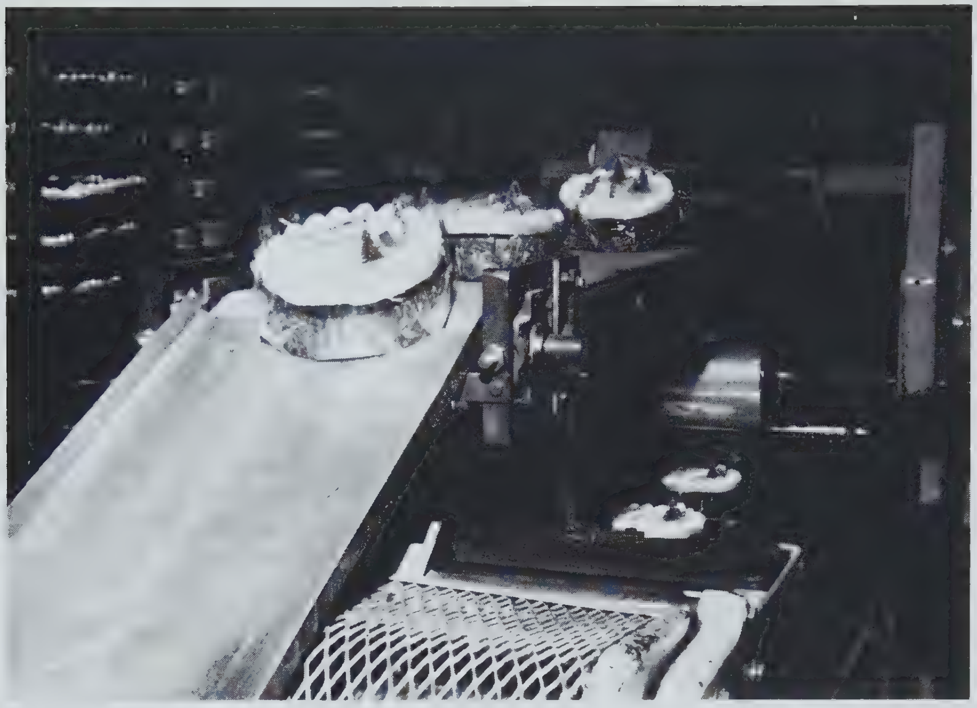


Fig. 32.3 *Cake wrapped in cellophane, delivery end.*

Cake boxes

Having now wrapped the cake, a suitable box or container should be selected. There are a variety of boxes on the market, and our choice should be to some extent decided by these main factors:

(1) Suitability for our purpose.
(2) Economy in price, in relation to the stability of the box.
(3) The present marketing trends.

In selecting, probably the white hinged box is the strongest and stoutest, lends itself to good packing, and provides a good rigid box to be transported over a wide area as well as a good class presentation for the local shop. The lid can be obtained with a cellophane insert to give a visual pack. It must be remembered that where quantities of such boxes are required, a good deal of storage space will be needed until they are used.

The collapsible box is perhaps the one most favoured, because of the small amount of storage space required, which, today is quite a factor. When erected and the lid secured, a fair amount of packing is required to keep the box firm and rigid. The lid can be printed with a name or suitable advertisement.

The third type is what is known as the self-erecting box. The formation is made by creases which, when assembled, retain their shape. The lid is also processed in the same way, and when fitted to the base makes quite a substantial box. Some packing will be needed and the lid should be secured on two sides with cellotape. These boxes are ideal when wrapped singly, but where they are to be sent out in quantities of 2, 4, or 6 they need to be contained in a larger corrugated carton, made to accommodate the required quantity. The packed quantity should not exceed six, and not be arranged more than two high. In the packing of quantities, rectangular outer cartons are always preferable to square, for you will find they stack more easily; whereas the square carton can only be contained in a square and therefore will not be so easily transported from one department to the other. On each carton, the number of cakes, with the weight, plus the name or type should be clearly printed on the labels.

If an entirely visual pack is desired, then it is policy to look at acetate containers. These vary in thickness, some are particularly strong and rigid, and the whole of the cake, when fully iced, is seen at the same time. However, these containers are quite expensive, and this must be considered with the price at which you wish to sell. For an individual or specialist cake these are ideal, providing you have the cake made to fit, and although some have been used on a rather larger scale, they are not generally used in quantity. The same problems arise as with the rigid box in storage, and the acectate container must be enclosed in a box or carton if it is to travel any distance, so it seems that the cost of packaging somewhat limits its use.

Packaging is a very substantial business today, and ever changing, so we should keep abreast of the times and in constant touch with the manufacturers, then any new ideas can be received, and their possibilities assessed with their practical adaptability to our own advantage.

33 Method Study in Mass Production

Modern methods of production call for a highly organized labour force, which is not wholly composed of skilled labour, but more a problem of harnessing unskilled labour to enable a continuous, smooth, mechanical operation to produce a satisfactory standard of the goods we require to market. Method study is therefore a means of assessing the number of persons required for a particular work, in the first place, and secondly a means of individual job assessment in relation to the work content.

Every type of work brings its own problems, but in the light of the labour available, the work must be designed so that the results we estimate for will be compatible with our economy and production capacities.

Many of the continuous mixing procedures, already in operation throughout the country, require a very low labour force as the result of mechanization. It is therefore to our own advantage to apply where possible, the same principles, or an adaptation of these principles, to our everyday methods, and so produce with the greatest economy. In this instance we are dealing with decorated cakes, and when there is a heavy seasonal demand at Christmas, we look to such measures to help in extending our own labour to meet the demand, rather than supplement it and so increase our cost. The amount to be saved or how far we can extend the labour depends upon the application of our method study.

Flow-line production

A production line arranged on these principles is known as flow-line production, and is performed on a moving band or web to give a continuous production run. Flow-line production is therefore necessary when demands increase to an extent that makes it unprofitable to provide individual workers with the space and equipment they would require to complete an article (in our case confectionery), entirely on their own.

Flow-line production is also justified when there are insufficient operators to meet the sudden increases that are demanded from time to time, and we are obliged to call upon the services of unskilled operators. In such circumstances, it is obvious that an unskilled operator can be trained more quickly and easily to do one part of the job, than to carry out the whole process efficiently. Therefore, in order to set up a flow-line, there are some essentials, which must be considered.

1. The entire work content of the cake must be broken down into individual operations.
2. The individual operations must be so arranged that the work content of each person is equal.
3. The time allowed for each operation must be sufficient to enable the required standard of quality to be maintained throughout.
4. The speed of the web must be arranged to enable each operator to complete his or her operation without a great deal of personal movement.
5. Icing turntables, and similar equipment, should be fixed at a suitable height to enable the operators to slide their work off, without lifting.

BALANCE OF WORK

The work content should be designed to give all the operators an equal amount of work. This is very important, because an unbalanced line not only causes discontent amongst the operators but results in a general loss of production. Nothing is worse than to find that one operator is so harassed that her neighbour must await her turn to do her work; it is equally wrong that the next operator cannot get the work away, and so confusion arises and eventually the movement of the web comes to a standstill. Therefore, output can only be as fast as the longest or slowest operation.

It is also important that the standard of skill should be the same with all operators on the line. An unskilled operator working alongside skilled workers would not only be frustrated in trying to keep up, but would be a hindrance and could cause a severe loss of production. Similarly, a skilled operator amongst a team of unskilled operators would have a comparatively easy task, and in this case there might be a temptation to increase the work content of the skilled worker; but this would in time seem unfair, for as the team gained in experience and became more efficient, the skilled worker would be overloaded, with the remainder slowing down. By all means encourage the skilled operator to help the unskilled, but it is detrimental to alter the balanced and equal work contents in order to cater for the various levels of skill.

Training a Team

To achieve good team work, all operators should first be given some instruction and training, for once a line has been trained and become proficient, they in turn will train the unskilled to be equal to themselves. Where a team rely on one another for the output, they will determine to some extent the quality of the operator, for if one of them cannot keep up or lags behind, the general sentiment is for a replacement. Once the nucleus of a good team has been formed, it appears easier to add the required standard of labour.

Another point must always be borne in mind. When the team is fully skilled it becomes interchangeable, and shortage of labour is more ably dealt with.

Work on Moving Web

When the operators are working on a moving web, the speed of the web should be such as to allow an operator to complete her cycle of work. The web must also be long enough to give each operator sufficient room to perform her work, and usually an allowance of 3 ft. per person should be a guide, and ten operators will require at least 30 ft. The speed of the web should be variable, but if the web is set to travel at 10–12 ft. per minute, this should be a reasonable speed for the operators to maintain good quality work. The variable speed can easily be adjusted to your own requirements.

The width of the web need only be sufficient to take the largest cake, say 8–9 in., then the table width should be the same each side, as both sides of the web are to be used. Where possible, the web should run at the same height as the turntables, so that the cake will slide on and off after each operation has been completed. Tables must be so arranged as to provide space for the decorations too.

The following could be a typical example of the work content break-down for a fully iced cake:

Break-down of work

Operator No.	Operation	Time allowance
1	Prepare and weigh the first icing	1 min.
2	Ice top and sides	1 min.
3	Ice and stipple	1 min.
4	Finish the base border	·5 min.
5	Pipe the top border	·5 min.
6	Add the decorations	·5 min.
7	Finish off and set aside to dry	·5 min.
	Total work content =	5 mins.

For a white roughed cake, operator No. 1 will prepare the cake and add the required weight of icing, No. 2 will then coat the top and sides with the weighed icing, No. 3 will complete the sides with the marking of a comb scraper, or stipple the whole cake over, No. 4 will coat and smooth off the base border and add a little sugar if necessary, to give a frosty appearance, No. 5 will pipe the star border, and No. 6 will add the set decorations, while the cake moves along the web. No. 7 will also help, possibly by adding the inscription or motto and putting the cake on the tray to dry. This is briefly what happens, but more detailed work must also be given, where the operations are not so easy. The whole project is designed as simply as possible, to encourage the operators to produce the work as quickly as they can, with a standard quality.

The amount of time allowed for each operation contains a percentage of rest factor, so that the production based on the above means that with a total work content of 5 minutes, one cake is produced and the whole cycle of the operations is performed. One person, therefore, should be capable of producing that one cake every 5 minutes, or twelve cakes per hour.

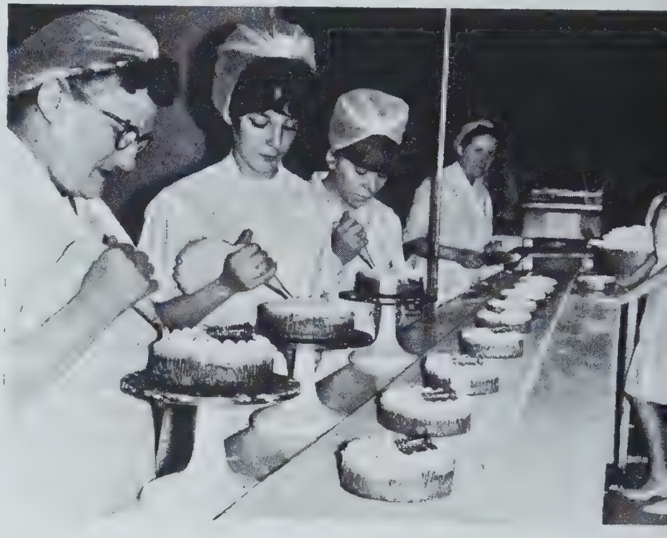


Fig. 33.1 *Section of production line.*

Therefore, to arrive at the number of operators required for any given number of cakes per hour, the following formula would be a guide:

$$\text{Number of operators} = \frac{\text{production per hr.} \times \text{work content}}{60}$$

To produce 60 cakes per hour, would be 60 times the work content, which in this case is 5 and divided by 60, gives the answer 5.

The break-down of the work would then be:

Operator 1 = operation 1
„ 2 = „ 2
„ 3 = „ 3
„ 4 = „ 4 and 5
„ 5 = „ 6 and 7

This will now equal the work content, for every one has a full minute's work.

With the production of 120 cakes per hour, two per minute, the number of operators would be:

$$\frac{120 \times 5}{60} = 10 \text{ operators.}$$

Since there are operations which take one minute each, and they cannot be broken down, to simplify still further, the 10 operators would then work as follows:

Op. 1 and 2 each do operation No. 1
Op. 3 and 4 " " No. 2
Op. 5 and 6 " " No. 3
Op. 7 does operation No. 4
Op. 8 " " No. 5
Op. 9 " " No. 6
Op. 10 " " No. 7

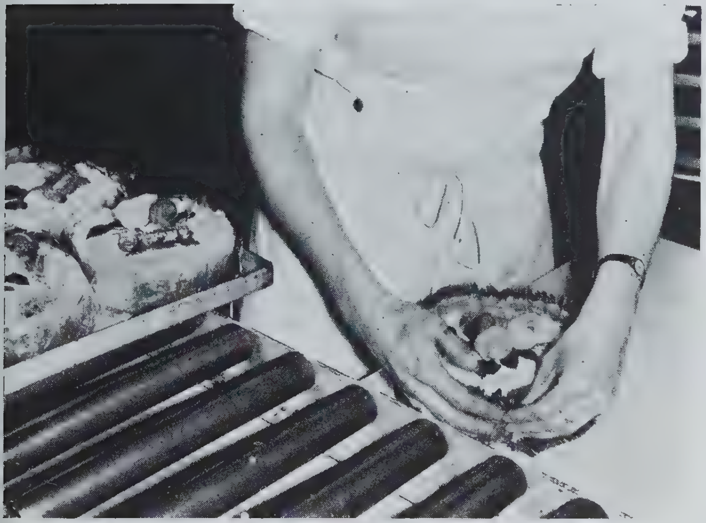


Fig. 33.2 *Showing frill secured round cake.*

In this way, we shall have the same quantity of work from each operator, in a given time.

WORK OF SERVICE HAND

It should be remembered that each operator is fully occupied, and in order to keep production moving smoothly, a service hand will be required. Her duty is to supply and replenish anything that is required, similarly to act as a relief, where possible. The fully coated cake is therefore restricted to some extent to the amount of work content, in order to achieve a flow-line, and only the minimum duties have therefore been included.

Where a more complicated work content is necessary, a re-appraisal of the whole situation is advisable. For instance, if a scroll border is required, with overpiping, this calls for an extra operation, which will take a little longer, and this in turn slows down the work content of others; and so the movement of an operator is necessary to keep the line balanced. But whatever the advanced stage of production, the basic principles of a continuous flow-line are to some extent very adaptable.

Christmas cakes that are iced on top only lend themselves more readily to speedy production, and where it is necessary to increase the operators, the number of cakes produced would more than offset the extra labour costs.

An example for a flow-line operation for such a cake:

Op. 1 Prepare the cake and add required weight o sugar
Op. 2 Place the cake on turntable and ice.
Op. 3 Place the cake on turntable and ice.
Op. 4 Pipe the border
Op. 5 Pipe the border
Op. 6 Decorate with Christmas figures and motto
Op. 7 Decorate with holly spray
Op. 8 Place in the tray and set aside
Op. 9 Service hand

Here, apart from the service hand, one person must keep the line supplied with icing, and this means the making of it also, that is, where royal icing is concerned. If a fondant type is used, it is essential to have a bulk container, with ready prepared icing, so that it can be drawn off at any moment. As the production run develops, a careful watch must be kept to ensure that each operator has the correct cycle of work. Once this has been achieved, the general supervision of a chargehand will then maintain the productive flow-line. Any hold-up or faults are ably remedied on the spot.

PACKING

Similar principles are applied to the packing of the cake and just as cooling was the intermediate stage of production, so the machine wrapping is again the

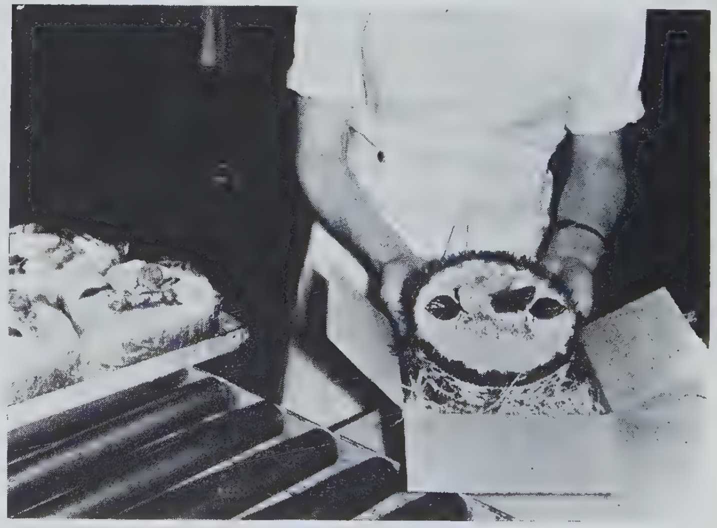


Fig. 33.3 *Cakes, packed and boxed.*

dividing line. Once the cake has been wrapped and the frill added, boxing is also done on a moving web. Although the team may vary according to the type of production, this is usually along the following lines:

Op. 1 Supply the web with cakes
Op. 2 Add and secure the frill
Op. 3 Add and secure the frill
Op. 4 Prepare or make carton or box
Op. 5 Place in box and add any protection
Op. 6 Place in box and add any protection
Op. 7 Seal and secure the box
Op. 8 Pack into outer container and label

Total work content –

The type of box, and the amount of work involved will decide the question of whether one or two operators are needed. The web will move at approximately the same speed as the icing, and will be at table level, and similar in length. In securing the frill, the cake is moved off the web, as invariably the frill is slipping and must be held in position while the cellotape is dispensed from a reel, and the operation may be completed as the web is moving. A table at the end is required for the carton to be sealed and labelled, according to stock-room requirements.

The question of how much can be done in a given time is one which is all too important in the field of modern production.

34 Quality Control

For the manufacture of cakes in any great quantity, it is now realized that certain standards must be laid down to achieve consistent production. Quality control deals with this particular aspect and its purpose is to examine, with practical application, suggested methods of achieving an ultimate objective: something that will ensure consumer satisfaction at an economical productive cost. The value of this function can only be assessed in conjunction with the policy factors of the individual company. The control of quality functions should only be the responsibility of senior members of the organization and under proper supervision. The controls and other details laid down are then co-ordinated into a comprehensive exercise or plan. Quality is controlled under two main headings:

1. The setting of the standard required.
2. Checking and recording to ensure that the standard is continually maintained.

The second item is very often referred to as quality control, but should be treated as part of the function – one which has some importance in relation to the whole, but is not complete in itself.

Setting the standard

Commencing with the standards to be set, we must begin with the ingredients, and specifications are therefore necessary. How exact these should be is a matter left to the suppliers. Our main ingredients are flour, fat, and sugar. We in the bakery trade are fortunate enough to have these ingredients ready prepared, by which is meant that flours fall into their respective categories. Certain flours are suitable for certain cakes, providing the selection of one of these will adhere to the specification for flour. It is not intended to try to define a standard for the supplier, but rather to accept what, by his technical skill and experience, has been milled for a special type of cake. Any slight variation in the basic quality of these ingredients can be readily balanced by the skill of blending and baking. There are of course limits to which these variations are acceptable. This is overcome by complete liaison between the supplier, purchaser, and production. Thus a regular quality level can be obtained.

Fruit for Cakes

These remarks apply to the three main ingredients, flour, fat, and sugar, but the same principle should be applied to all other ingredients. The greater the quantity, the better the chance to apply control, the one exception is, perhaps, fruit. This leaves much to be desired, though a good deal of headway has been made with fruit-growing countries on their methods of producing, particularly with the Middle East, so we are obliged to equate our own standard through selection.

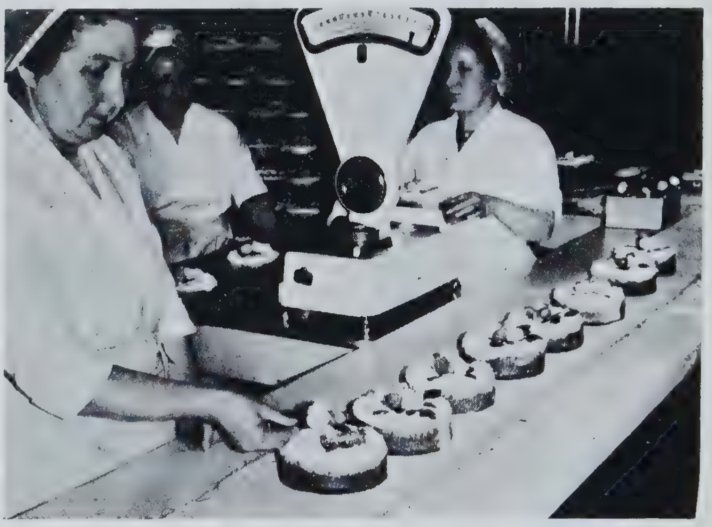


Fig. 34.1 *Check weighing.*

A bold, fleshy fruit of good colour will give far better eating qualities than the dry, darker varieties. These are the main points to be considered, but how clean the fruit is should also be a major factor, which can be determined by the usual washing methods. A good fruit is spoilt for us if it needs a lot of careful picking of stalks or other foreign matter, for this can be a costly procedure. All such items should be considered before any standard or control is set.

Cherries are now graded, so that if a particular size is purchased, this will give the standard.

So the basic principles are formulated, and only by close association with the supplier, and determining what is required in relation to quality and cost, can a standard or level be specified.

DEVELOPMENT DEPARTMENT

Having attained sufficient knowledge of our ingredients, we now consider the type of product required, or even requested. Today, in many large establishments, the primary work in this sphere is done by a Development Department, the function of which is to formulate and provide the sample from the ingredients best suited to the purpose, and to record in detail the correct mixing, method, baking, finishing, and packing of the product concerned.

Other departments are in turn closely associated, and will inquire into the various aspects of production: (1) the costing of the product which will determine the ingredient value; (2) what is requested by the market in the light of what is to be accepted by the consumer; (3) how this will affect the production – can it be produced satisfactorily? Consideration of all these factors must have some bearing on the ultimate outcome.

RECORDING OF SPECIFICATIONS

The formulation of the mixing and the product is therefore produced with this knowledge, and only when this product is agreed are the details passed to the various productive departments. The mixing and timing must be set down. In these there might be slight variations, in the first instance, for it must be understood that while in the development stage, the mixing is done on a very small scale, and a certain amount of experience is necessary to transfer this knowledge to a productive plant.

Such variations must be adjusted right from the start, then the standard is set for the production unit. The same procedure applies with the baking. Times are given, oven capacity, and so on until every stage through which the products will pass has its own value or standards set; and so with the secondary processes by which the cake in question is to be marzipan topped and iced, the same specifications are set down, together with the process and respective weights.

Packaging

The product has now been assessed through the various productive stages, and we have next to arrange to present it correctly. This process is generally termed packaging, and while it is possible to give certain specifications for paper and film used for a particular package, it is far better to enlist the supplier's help in this matter. With a good deal of technical development and the continual evolution of materials of this nature, we are well advised to let the supplier be our guide, although we should not necessarily abandon all types of packaging that we have proved to be successful in the past. Until all these values are assessed, specifications cannot be complete.

With regard to cellophane film, the question of wrapping the product by hand or machine is of relevant importance. In using the machine for wrapping, the film must be purchased to suit that particular machine; this will mainly affect the width, for the type of film is determined by the product to be wrapped. Another point is the question of sale, where a product is kept over a period this can affect the type of cellophane used; and another is the number of wrappings a reel of cellophane may be calculated to yield provided the product is the same – so many per pound of cellophane. To these considerations must be added the design and printing of the wrapping, and only in full collaboration with the respective manufacturers can the material specification be converted to a standard, to comply with the product we are producing.

The question of how the product is to be presented should be just as important as the making, for correct presentation, consistent with competitive pricing, becomes a major sales factor. Presentation boxes vary in design and have been described in Chapter 32.

The distance the cake has to travel, plus the price limitation, must eventually decide on the type of package to be used. The rigid and self-erecting type, with a certain amount of cellophane shavings to give support, may be transported over a wide area; the idea of the visual pack would be spoilt by inside packing, and this type is therefore limited by the distance it may travel. Each cake will then be placed in a corrugated outer package, and on each outer, a label, bearing the name or type of cake, plus weight and selling price. Such containers and labels are always pre-designed, to give standardization throughout.

Visual Samples

When all the various standards have been agreed and confirmed, samples of the product are then prepared for the production lines. Each department must have its own standards laid down, and the personnel fully instructed as to what must take place, and what is expected. In the icing section, the cake must be on display at all times, completed as before with the necessary instructions, and only by this means will consistency and standards be confirmed.

Similarly on the packaging side, a visual pack must always be available. Where shavings are used to pack, the amount should be ascertained. Cellophane, size, outers etc. must all be clearly defined, and proper instructions given.

If desired, photographs may be used to demonstrate the visual standards, and while this is good with a cake top, it is far better to supply the actual specimen, for this is not only more clearly seen, but it creates a mental picture in the mind of the operator. The sample should be regularly changed and the operators will readily retain the standard mentally.

35 Bakery Hygiene

Gradually over recent years we have become better acquainted with hygiene than ever before. We, as producers of food products, realize the importance of making and finishing our cakes under clean working conditions, and the sales value this has when we welcome customers to see for themselves the hygienic conditions under which the product they buy is made. Each bakery, whatever its rating, has some standard, and it is in the interest of all concerned to raise the standard continually to a higher level. If we produce an excellent quality cake we suppose the cake to be manufactured under equally ideal conditions for if the conditions of work are not very high, then this will reflect on the quality of goods produced. Rarely do we find good qualities springing from low standard working conditions.

Some excellent examples of high standards will be seen in bakeries both large and small, but the larger concerns perhaps have the facilities to expand the operation in more detail, so much so that they have their own Hygiene Officer at top management level. He should be in a position to guide or direct the management, production foreman and charge-hand on standard routine and general cleanliness throughout.

Personnel

Although primarily controlled by one person, it is the general attitude of all concerned that counts. Everyone from the top floor down must be made aware of what is required and what is expected, and instruction should be laid down and so percolated through the different levels. By so doing, everyone becomes aware of such urgency and continual control, and each one accepts this as part of his work, so the standard will show some improvement. These efforts must be continuous, however, to raise the standard.

WORKING CONDITIONS

Certain conditions of work must first be provided. Machinery should be modern and maintained in good working order. The work-room should be well lit with sufficient ventilation, and sufficient space provided to make these conditions practicable. Equipment should be positioned in such a manner that a general cleanliness can be maintained, with the smaller units movable. Tables should have a good working top and be regularly painted and kept in repair. Conveyors can be treated in exactly the same way, and a Polyvynil coated web is more easily cleaned and kept in condition than the standard type of webbing. The mechanical section should always be accessible providing it is under the care of an experienced person. The better the cleaning facilities, the better the condition of the working units will be.

Coupled with good working conditions comes the use of cloakroom, rest rooms and canteen facilities, though these are separate units and need even more care and attention; it is these standards and the way people are trained to use them that reflect in turn on the general working conditions within the bakery.

Overalls and Caps

Overalls should be standard uniform, kept spotlessly clean, and regularly changed. Hats, of one material or another, become more essential today, whilst turbans or caps should be compulsory for all employees of both sexes in an effort to maintain cleanliness. Some firms will provide all these and even arrange for them to be laundered; some will provide cupboards for employees to keep them in good condition.

In every respect the inference is to improve personal working standards. Supervision in this direction is very helpful for if employees do not keep the required standard, then they are made to change. Such conditions will soon be acceptable and each will then fall in line.

The periodic introduction of notices, posted in the working area, will also prove beneficial. 'Keep it Tidy', for instance, will have its meaning explained where there is supervision.

Care of raw materials

So far we have dealt with conditions of work and personnel, but one aspect must always be looked into: the materials we use should be housed under ideal conditions on delivery, and general tidiness maintained to ensure that raw materials are used in proper rotation. Part packages should not be left open. Glass containers should be eliminated from the working area. If this is difficult to arrange, then a separate room is necessary in which the contents are emptied before they go to the work-room. This generally affects colours and essences – every precaution should be taken in this respect.

Fats should be kept in good storage conditions and where possible sufficient for the day's production kept in a temperature controlled room to bring fat to bakery temperature, 60°–65°F. Eggs will also be slowly de-defrosted, and when thawed the egg is placed in a temporary tank or container and slowly stirred whilst being warmed to a temperature of 65°F. By then it is ready for use. Only sufficient must be prepared for immediate use and the containers thoroughly sterilized when emptied. It is essential that empty tins are cleaned out and disposed of as quickly as possible to avoid any possible contamination. Boxes and containers should be flattened and placed on a suitable stillage until removal and subsequent disposal.

Dried Fruit Machines

Reference has been made earlier to dried fruit, for this is a commodity over which we have little control, therefore it is in our own interests to see that we are thorough in its preparation and the elimination of foreign bodies. Modern machines are designed to allow stones to sink in a water container while causing the fruit to pass over a vibrating sieve to remove the stalks. The fruit then travels along a white plastic web so that any remaining extraneous matter is readily picked out by the operative.

Flour should be used in careful rotation and avoid holding too great a stock, for it is in these conditions that contamination takes place. Flour sieves should be regularly cleaned, and inspected for loose wires.

Hygiene is a very wide subject and only the essential working conditions applicable to general bakery routine have been stressed. With watchful control over the raw materials we use, together with ideal mixing and baking facilities and the enthusiasm and realization of the objective by the bakery employees, education and progress will go hand in hand in the interest of all.

36 Conclusion

THROUGHOUT these pages I have attempted to write of the many stimulating experiences and problems that I have encountered from time to time, in the hope that you will be inspired with enthusiasm for the art of sugar decoration and its modern everyday approach.

Craftsmanship will always be of the greatest importance, and not only for those who wish to enter the various baking competitions: the expert skill in production, coupled with artistic ability, will improve your own decorative image and stamp your individuality on your products. In the more commercial field, however, craftsmanship takes a different form, for it is just as important to be able to standardize a product mechanically as it is to apply your knowledge to producing it by hand. In both categories it is necessary to study your raw materials, and to acquire the knowledge of what happens during the mechanical process, always aware of the latest technical advances and future developments, and the harnessing of new methods to our way of life.

The student has not been overlooked in these pages, but will find the basic principles laid down as a most useful asset to acquire in common with the school curriculum. Always remember that achievement does not come overnight; but constant practice, a good deal of patience, and the ability to be thorough in whatever you undertake, can but lead you on the road to success. Alertness to modern progress and the general marketing trends, an ever watchful eye and a readiness to innovate and improvise are all qualities to be encouraged and perfected. Efficiency and the constant improvement of hygienic working conditions, coupled with a sense of responsibility and control, will make the student of today the craftsman of tomorrow.

For the more experienced confectioner, an approach to modern production methods has now been explained and illustrated, to help or guide him to a higher grade of efficiency. Whatever the field of experience, inspiration and modern ideas will always be a challenge which must be accepted as such, and developed to improve both style and versatility. One cannot stand still, or stand by past experience, but a systematic progression of modern ideas, greater self-assurance and confidence, provide the foundation for a more imaginative outlook and a sure way to skilled workmanship.

Many of the modern productive ideas have been developed during the course of everyday work, and at this juncture I must pay tribute to all those so closely connected with me, including my numerous staff, who through their efforts have helped in no small measure to bring ideas into being and so have encouraged more modern methods in our productive processes.

The writing of this book, may I say, has given me great pleasure, and I sincerely hope that equal pleasure will be felt by those who read it; and I trust it may be helpful and give inspiration to many in the bakery trade, both students and confectioners alike.

Index

Acetic acid, 15
Air bubbles, 56, 111–13
Aladdin and the Lamp, 163
Almond icing, 11–14
    commercial production, 11, 202–3
    to apply, 11–12
    weight and thickness per cake, 11–12
Animals:
    to draw and pipe, 124–38
    to depict natural surroundings, 128
Apricot purée, 11

Baby birds: to draw, 106
Bags, *see* Paper bags
Bakers' chocolate, 191
Baking temperatures and times, 10
Ballet figures, 177
Base boards, 6–7, 202
Belfry: to make, 69–70
Bells, 49, 64, 72
Bird life: to design and paint, 147–8
Birds, 105–23
    to colour, 108
    to draw, 105–7, 109, 111
    to pipe commercially, 107–8, 110–21
    to store (piped sugar), 118
Birthday cakes, 85–8, 168, 172–3
    borders for, 165–7
    numerical, 87–8
    recipes for, 86–7
    sprays for, 148–9
    standard weights, 85–6
    use of colour in, 85, 88, 146, 160–4
Blue tits:
    to draw and colour, 105
    to pipe, 105
Boards, *see* Base boards
Boat models, 169
Book design, 173
Borders:
    base, 54–5, 62
    birthday cake, 165–7
    coloured, 158–9
    to draw, 39
    flange, 52–4
    jellied fruit, 177
    piped, 47–8, 52–5, 62, 65
    marzipan, 197
    run-out, 58–62, 64–5
    soft-sugar, 55
Bow: to tie, 44
Budgerigar, 123
Bulbs or dots, 27–8
Butter: choice of, 1
Butterflies:
    to pipe and assemble, 142–3
    to paint, 143, 149

Cake boxes, 180, 208, 212
Cake sizes and shapes, 5, 175, 200
Cake weights, 6, 201
Calcium phosphate, 15
Camel and rider, 136–7
Carnations:
    to model, 185
    to pipe, 98
Catkins: to pipe, 202
Cats: to draw in squares, 130
Cellophane wrappings, 206, 214
Centenary cake, 174
Chaffinch: to draw and colour, 105
Cherries, preserved, 4, 213
Cherry blossom, 104
Chickens:
    to draw and pipe, 111–14
    to model, 187
Children's cakes, 87, 168–72, 176–7
Chocolate:
    for colouring, 146
    piped decorations, 191, 199
    preparation of, 190
Christening cakes, 65–7
Christmas cakes, 192–9
    commercial production of, 200–5, 209–16
    decoration of, 194–9, 204–5
    marketing and display, 192
    recipes for, 193
    sizes and weights, 194, 202
Church tower, 51, 84
Church centenary cake, 174
Circles:
    divisions of, 36–8
    to draw with, 113–14
    to pipe, 52–5
Circus animals, 135–6
Citron peel, 3
Clown, model of, 188
Coating of the cake, 31–5, 204
Coat of arms, 73
Cochineal, 145
Cockerel: to draw and pipe, 111
Colour:
    for birds, 108, 148
    for birthday cakes, 160–4
    in cake decoration, 158–65
    of cake mixture, 1, 175
    charts for, 144
    for figures, 139

Colour—*continued*
    to lighten and darken, 146
    in piping, 94–5
    of roses, 183
Colours:
    dispensing of, 181
    edible, 145
    green and red, 145
    heraldic, 74
    neutral, 145
    primary and secondary, 144–5
    warm and cool, 144–5
Colour schemes, 165
Commercial cakes:
    artificial decorations for, 204–5
    decorating time and cost analysis, 71–2
    exhibition, 70, 178–81
    icing of, 203–4
    three-tier wedding, 70–2
    (*see also* Christmas cakes)
Compasses: to use, 40
Corners, 59, 60, 62
Cottage:
    to draw, 163–4
    to make (cake), 169–70
Crinoline lady, 141
Crocus: to pipe, 100
Cupids, 50, 84
Currants, 3
Curves:
    designs with, 42
    to draw, 39, 42
Cut-outs, 82, 196

Daffodils: to pipe on cake, 100
Daisies: to pipe, 97
Decorations, *see* Christmas cakes *and* Wedding decorations
Designing:
    modern, 58–63
    study of, 36–42
Development Department, 213–14
Dogs, 129–30
Dots: to pipe, 27–8
Doves, sugar:
    making of, 114–18
    stages of piping, 116
    supporting wings and tail, 116
Drawing and designing, 36–42, 144
    circles, 36–9, 113–14
    ellipse, 40–1
    evenness in design, 180
    ovals, 40–1, 162
    pentagon, 41
    reversing drawings, 136
    squares, 42, 130, 163
    tools for, 36
    triangles, to draw within, 122
Dried fruits, 3–4, 213
    cleaning machines for, 4, 216
Drying cupboard, 33
Düsseldorf cakes, 178–9

Eggs: different forms of, 2–3
Egg whites, 15–16
    to improve whiteness, 16
Elephant:
    to draw, 134–5
    to model, 187–8
Elf: graph of, 164
Ellipse: to draw, 40
Engagement parties, 65
Engine cake, 168
Enrober: use of, 88, 190, 203–4
Equipment:
    drawing, 36
    for icing, 19–23
    modelling, 182
    piping, 20–1, 56
Exhibition cake:
    almond paste for, 12
    baking of, 10
    citron peel for, 3
    commercial type, 31, 70, 178–81
Exhibition dummies:
    coating of, 34–5
    motifs for, 139
Exhibition run-outs on glass, 57
Exhibition schedules, 180
Exhibition standards, 178

Fairy cottage, 163–4
Figures:
    animals, 123–38
    birds, 105–23
    human, 139–41
    in motion, 126–7
    piping of, 139–43
Flange borders:
    to design and pipe, 52–4
    icing for, 52
Flour, 1, 213
Flower centres, 97, 98
Flower piping, 94–104
    equipment for, 94–5
    petal formation, 96
Flower studies: to paint, 148–50
Flow-line production, 209–11
Foliage, 150
Fondant, 88, 204
Frames:
    for cutting cake, 175
    for special cakes, 175
French curves, 39–40
Frill:
    to fix, 207, 212
    size of, 205
Fruit:
    as borders, 177
    dried, *see* Dried fruits
    modelled in marzipan, 186

Fruit blossom:
    to pipe, 104
    spray designs, 103, 150
Fruit cakes:
    ingredients for, 1–4
    to mix and bake, 8, 10
    recipes for, 8, 86, 193
Fuchsia:
    to model, 185
    to pipe, 102
Fudge icing, 204

Geese: to draw and pipe, 111
Glucose, 11
Glycerine:
    in fruit cakes, 2
    in icing, 16
Golden Wedding cake, 64–5
Gum paste, 80–4
    cut-out shapes, 82
    to make, 80
    top ornaments in, 51
    use of moulds with, 82

Hare: to draw and colour, 128–9
Harmony, 145, 158
Heart-shaped cakes, 5
Heather:
    piped, 67–8
    in sprays, 64
Heraldry, 73–9
    charges, 79
    colours, 74
    escutcheon, points of, 74–5
    inescutcheon, 78
    ordinaries and sub-ordinaries, 76–8
    party lines, 75
    roundels, 78
Hexagonal cakes, 7, 60
    to coat, 34
    to fix panels, 62
Hoops:
    liners for, 5, 201
    size of, 5, 201
Horse:
    circus, 135
    to draw in graph, 132
    hunting, 132–3
    jumping, 177
Horseshoes, 50, 64, 72
Horseshoe-shaped cakes, 5
Houses (novelty cakes), 169–72
Humpty Dumpty, 162
Hunting scenes, 132–3
Hygiene, 18, 215

Icicles, 197
Icing, *see* Royal icing *and* Fondant
Icing sugar, 15
Initials, 93
Inscriptions, 197
Invert sugars, 2

Jack and Jill, 160
Jellies (to fix paste), 11–12

Kingfisher: design for, 106
Knives, 19, 44

Lambs:
    to draw in squares, 130
    to pipe, 130–2
Layer cakes:
    to bake, 60, 67
    to cut, 175
    recipe for, 87
Lemon and orange peel, 3
Lettering, 89–93
    block capitals, to pipe and fill in, 91–2
    coloured, 92
    German and Gothic, 91
    ornamental, 90
    Roman, 90
    script, 93
Letter transfers, 91–2
Light and shade, 154–6
Lilac: to pipe, 103
Liners, 6, 201
Lines:
    horizontal, 26
    parallel, 25–7
    to pipe, 24–7
Little Boy Blue, 161
Little Jack Horner, 161
Little Miss Muffet, 161

Marbling, 167
Margarine, 1
Marzipan:
    borders in, 197
    cake decorations, 182
    to colour, 187
    cut-out motifs, 196
    to model (flowers, fruit, figures), 182–8
    preparation of, 182
    sugar content, 187
    tools for, 182
Mass production:
    method study in, 209–12
    quality control, 213–14
    recording specifications, 214
Modelling:
    marzipan, 182–8
    with moulds, 82–4
Model trains (cake), 168
Monograms, 93
Motor-track border, 198

- Moulds:
  - to buy, 83
  - to make, 82–3
  - to use, 84
- Moving web, 203, 210, 212

- Name-plates, 176, 199
- Narcissus:
  - centres for, 97
  - to model, 185
  - to pipe, 96
- Network, 54, 69
- Novelty cakes, 168–74
- Numerical cakes, 88, 175
- Nursery rhymes and fairy tales: designs for, 160–4, 171

- *Old Woman's Shoe*, 171–2
- Oval:
  - to draw, 40
  - to draw in, 162
- Oven capacity, 201
- Overpiping: method of, 29, 52
- Owl: to draw in stages, 123

- Packaging of cakes, 206–8, 214
- Paint-brush:
  - to choose, 56
  - three sizes, 146
  - uses for, 52, 98, 101, 139
- Painting, 144–59
- Palm: to pipe, 98
- Panels:
  - to fix, 62
  - for special cakes, 67–8
- Pansies: to pipe, 98
- Paper bags:
  - to make, 21–3
  - to use, 94–5
- Parrot: to draw, 123
- Partridge:
  - to draw in triangle, 122
  - run-out of, 122
- Patterns: to purchase, 147
- Pentagon: to construct, 41
- Personnel, 209–11
  - numbers of, 210
  - training, 209–10
  - work of, 209
  - working conditions, 215–16
- Petal formation, 96
- Petal tubes, 94, 102, 166–7
- Pheasant: to draw and colour, 122
- Pillars for cakes, 50, 72
- Piping:
  - advanced, 52–7
  - of birds, 107–8, 110–21
  - borders, 47–8, 165–7
  - circles, 52
  - with chocolate, 191
  - direct, 130, 139
  - elaborate scenes, 132
  - elementary, 24–30
  - flowers, 94–104
  - human figures, 139–41
  - pressure control, 25
  - on wax-paper, 56, 139, 143, 191
- Piping tubes, 20–1
- Plain Cake recipe, 87
- Plaques, 131, 139, 149
- Plastic coverings, 12
- Plastic curves, 39–40
- Plastic decorations:
  - cupids, 50
  - top ornaments, 51
- Primroses, 101
- Protractor: use of, 38
- Puppies:
  - in decorative scheme, 129
  - to draw, 130

- Rabbits:
  - to draw, 124
  - to pipe, 124–7
- Raw materials:
  - for cake mix, 1–4
  - care of, 215–16
  - for royal icing, 15–16
- Reflections: to paint, 156–8
- Reindeer:
  - to colour, 138
  - to draw and pipe, 137–8
- Ribbons, 44
- Robins:
  - to colour, 108
  - to design and paint on a branch, 146–8
  - to draw, 106–7
  - to pipe commercially, 107
- Rock sugar, 197
- Rose nails, 95
- Roses:
  - colour of, 183
  - heraldic, 79
  - to model, 182–5
  - to pipe and colour, 98
    - (*see also* Wild rose)
- Royal icing, 15–18
  - to coat cake with, 31–5
  - commercial type, 203
  - equipment for, 19–23
  - to make, 15–16
  - to store, 17, 19
  - sugar consistency, 31
- Run-out borders, 58–9, 62

- Samples, visual, 214
- Scenes: to build up, 150–2
- Script letters, 93
- Scroll work, 28–30

Seal: to draw with graph, 136
Sectional borders, 60
Segmented cakes, 176
Service hand: work of, 211
Shadows: to paint, 152, 156
Sheeter: use of, 203
Shield: to construct, 74–5
Shoes (cake), 171–2
Shortenings, 1
Silver Wedding cakes, 64
Single-tier cakes, 6, 7, 60, 64
Six-petalled flowers, 97
Skies: to paint, 152–4
Sleigh: to draw and pipe, 137
Snowdrops, 98, 100
Soft-sugar work, 55–7, 88
Spatulas, 19
Sport (decorations), 174
Sprays:
  artificial flower, 48–50, 64, 205
  for birthday cakes, 148–9
  individual design, 59, 205
  semi-circular piped, 103
Square cakes:
  borders for, 59
  to coat, 33
  commercial three-tier, 70–2
  design for one-tier, 174
  weight of cake mix, 6
Squares:
  to draw, 42
  to pipe, 26
Squirrels, 127–8
Staff, *see* Personnel
Standards, commercial, 200, 214
Stands for cakes, 51
Star tubes: use of, 21, 165–7
Stencils, 42
Storage:
  cake bases, 10
  raw materials, 215–16
Sugar flowers, machine made, 94
Sugar-mix for piping, 113
Sugars: choice of, 1–2
Sunsets, 152–3
Swallows: designs for, 119
Swans:
  to draw and pipe, 109–11
  to model, 187
Sweet peas:
  to model, 185
  to pipe, 97–8

Table tops, 12
Temperatures:
  baking, 10
  for chocolate, 190
Templates:
  to cut and use, 37
  with wedding cake, 44
Three-tier cakes:
  to assemble, 6, 7, 50–1
  balance in triangle, 7
  borders for, 58–60
  decorations, 45, 48–51
  stands, 51
  weights of tiers, 7
Time and cost analysis, 71–2
Tins, 5, 60
  (*see also* Hoops *and* Frames)
Toadstool (circle design), 164
Tools:
  drawing and design, 36
  modelling, 182
Top ornaments, 51, 72
Training of operators, 209–10
Trees: study of, 150
Tulips: piped design, 100–1
Turntables, 20, 31–3
Twenty-fifth Wedding Anniversary, 63
Twenty-first Birthday cakes, 173–4

Water: to paint, 154–8
Wax-paper:
  to assemble bird on, 118
  to pipe on, 116, 139, 143
  to remove designs from, 58–9
  types of, 56
Wedding cakes:
  baking of, 8, 10
  coating of, 31–5
  coloured, 44–5
  commercial, 70–2
  manufacture of, 8–10
  recipes for, 8
  single-tier, 6
  special, 67–70
  square, 59–60, 62
  three-tier, *see* Three-tier cakes
Wedding decorations, 48–51
  cupids and horseshoes, 50, 72
  floral sprays, 48–50, 59, 72
  network, 69
  silver bells and slippers, 49, 72
Wedge: to cut, 43–4
Wild duck: designs for, 123
Wild rose:
  single petals piped, 104
  spray designs and colouring, 104, 148
Wishing Well, 164
Wooden frames, 5–6
Wrapping of cakes, 206–7, 211–12
Wrapping machines, 207
Writing in sugar, 93

(93) || /

(94) ~~||||~~

~~||||~~ | | |

TITLES OF INTEREST

BISCUIT MANUFACTURE

Peter R. Whiteley
6 x 9″, xix + 300 pp., 121 illus.

THE BAKERS' DICTIONARY—2nd EDITION

Albert R. Daniel
6 x 9″, x + 209 pp., 5500 terms

CAKE DESIGN AND DECORATION—4th EDITION

L. J. Hanneman and G. I. Marshall
10 x 7½″, viii + 262 pp., 476 illus.

MODERN CAKE DECORATION—2nd EDITION

L. J. Hanneman
10 x 7½″, vii + 232 pp., 232 illus.

THE COMPLETE BOOK OF MARZIPAN

E. Storer
10 x 7½″, 167 pp., 647 illus.